

The Role of Close Relationships in Terror Management: A Systematic Review and Research Agenda

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Abstract

Terror management theory outlines how humans seek self-esteem and worldview validation to manage death-related anxiety. Accumulating evidence reveals that close relationships serve a similar role. However, to date, there has been no synthesis of the literature that delineates when close relationships buffer mortality concerns, under what conditions, on which specific outcomes, and for whom. This systematic review presents over two decades of research to address these questions. Findings from 73 reviewed studies revealed that close relationships serve an important role in buffering death-related anxiety. A range of dispositional and situational moderating factors influence either the activation or inhibition of relational strivings to manage heightened death awareness, the most influential being attachment, gender, and relationship-contingent self-esteem. These findings were integrated into an overarching model that highlights some of the conditions under which mortality salience (MS) influences relational outcomes. We conclude by highlighting a range of theoretical and methodological concerns to be addressed by future research.

Keywords

terror management theory, mortality salience, death-thought accessibility, close relationships, attachment, systematic review

The awareness of personal death is a fundamental existential concern that prompts humans to adopt strategies that offer protection from that awareness. Terror management theory (TMT; Greenberg, Pyszczynski, & Solomon, 1986) provides a useful framework for understanding how and why humans strive to enhance their self-esteem and support cultural worldview systems as a defense against death-related anxiety. Over the past two decades, much evidence converges to reveal that close relationships also serve a terror management function because they offer a symbolic promise of continuity, lastingness, and death transcendence. However, to date, there has been no synthesis of the research literature that delineates when close relationships effectively buffer death-related anxiety, under what conditions, for whom, and on which specific component of close relationships. Accordingly, the aims of the present systematic review are to (a) synthesize the empirical research pertaining to the terror management function of close relationships, (b) highlight important theoretical concerns, and (c) outline a research agenda to move the field forward.

inevitability of personal death. According to the theory, as with all forms of life, humans share a biological predisposition toward self-preservation in the service of both survival and reproduction. However, unlike other animals, humans are capable of sophisticated abstract and symbolic thought and possess an advanced self-awareness that, while extremely beneficial, has a dark side in that it results in an awareness of finitude. In other words, people come to realize that all efforts to maintain life will eventually be thwarted.

The theory proposes that people can manage that stark realization by way of a dual-component cultural anxiety buffer, consisting of a cultural worldview and self-esteem. People invent, absorb, and cling to cultural worldviews that are complex sets of humanly created shared beliefs regarding the nature of reality. Cultural worldviews provide (a) a theory of existence that offers subscribers a sense of meaning, purpose, and significance; (b) standards that set the benchmark for appropriate thought and behavior; and (c) the offer of literal and/or symbolic immortality to those who successfully adhere

TMT: An Overview

TMT was inspired by the work of Ernest Becker (1962, 1971, 1973, 1975) who argued that the basic motivation for human behavior is derived from the need to deny the

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to their particular patent of reality. Literal immortality is established by way of worldviews that foster and maintain a belief that there exists a life beyond biological death, usually in a form that transcends the physical (e.g., a soul existing in heaven). However, a sense of symbolic immortality (Lifton, 1979) entails a merger with entities greater and more enduring than ourselves, allowing for the transference of representations of the self (e.g., one's values, achievements, and philosophical thoughts) to remain a part of the enduring human reality. Qualifying for either literal or symbolic immortality requires that one maintains faith in one's worldview and adheres to its prescribed standards of value. Doing so provides one with the sense of being a valuable person in a world of meaning, which is the basis for self-esteem.

A major strength of TMT is its offering of a theoretical framework that facilitates the study of elusive processes of anxiety-management that predominantly occur outside of conscious awareness. The dual-process model of TMT (Pyszczynski, Greenberg, & Solomon, 1999) makes the distinction between these nonconscious processes of interest and those that are more conscious and effortful. To begin with, during conscious contemplation of personal mortality, people typically find relief in the form of cognitive and/or motivational biases such as the exaggeration of health and resilience that reduce their perceived vulnerability to death in a seemingly rational and future-oriented manner; these are referred to as proximal defenses and are generally not of primary interest. However, death-related thoughts on the fringes of consciousness result in the uptake of distal defenses (e.g., worldview defense and self-esteem striving) that are symbolic by nature and provide no logical or rational relationship to mortality. Understanding how distal defenses operate to buffer existential anxiety and why people utilize them under certain conditions is, of course, at the root of the majority of TMT research, and many ingenious paradigms have been devised to allow for these distal defenses to be specifically examined. For example, task switching between various cognitively demanding tasks between reminders of death and measures of distal defense effectively negates peoples' natural tendency to proximally defend, thus contributing to more robust and reliable findings (Steinman & Updegraff, 2015).

TMT Predictions and Evidence

Three main hypotheses have arisen in an attempt to capture the entirety of the phenomena that TMT attempts to explain and the processes derived from the theory. Whether examined on their own or in combination to converge on the core tenets of the theory, the following set of predictions and their implications are important to introduce.

Anxiety-Buffer Hypothesis

The anxiety-buffer hypothesis, which is generally considered to be the most central hypothesis, outlines that if a psychological

structure (e.g., self-esteem and cultural worldview) serves an anxiety-buffering function, then increasing the strength of the structure should effectively reduce anxiety. For example, the initial examination of the anxiety-buffer hypothesis by Greenberg, Simon, Pyszczynski, Solomon, and Chatel (1992) found that viewing a film containing graphic depictions of death was less existentially problematic for those who had their self-esteem experimentally bolstered, relative to a control group. Further research by Greenberg and colleagues (1992) demonstrated that chronically high levels of dispositional self-esteem also serves to mitigate defensive reactions to death.

Mortality Salience (MS) Hypothesis

If attaining a greater sense of literal and/or symbolic immortality is the primary way of dealing with death awareness by way of worldview defense and self-esteem striving, it stands that people should adopt more positive responses to anyone or anything that bolsters these psychological structures, and more negative responses to anyone or anything that threatens them, under conditions of MS. A great deal of evidence supports the MS hypothesis (see Burke, Martens, & Faucher, 2010, for a meta-analytic review). In a typical MS study, participants are (a) primed to become aware of their mortality by writing about their own death (vs. a non-death-related aversive topic), (b) asked to complete various cognitive load/distraction tasks, and (c) are asked to complete an outcome measure of distal defense (e.g., self-esteem striving or worldview defense). It is important to note that Component 2 (i.e., engagement in cognitive load tasks) is vital for the success of the paradigm, as the dual-process model component of TMT (Pyszczynski et al., 1999) stipulates that people are more likely to distally defend themselves from MS only when thoughts of death have been banished to the fringes of consciousness.

Numerous experimental studies demonstrate that MS increases the probability of people defending their internalized cultural worldviews. For example, MS is associated with harsher judgments of moral transgressors (e.g., Florian & Mikulincer, 1997), more aggression toward worldview dissenters and less aggression toward worldview validators (e.g., McGregor et al., 1998), and increased support for extreme violence against foreign enemy fighters even at the expense of lost civilian lives (e.g., Pyszczynski et al., 2006). Furthermore, MS is associated with self-esteem striving in the form of increased identification with aspects of the self that bolster self-esteem and decreased identification with personal attributes that threaten it (e.g., Goldenberg, McCoy, Pyszczynski, Greenberg, & Solomon, 2000), desire for fame (e.g., Greenberg, Kosloff, Solomon, Cohen, & Landau, 2010), and greater engagement in risky behaviors such as sunbathing, drug use, and reckless driving when these behaviors are sources of self-esteem validation (e.g., Hansen, Winzeler, & Topolinski, 2010; Routledge, Arndt, & Goldenberg, 2004; Taubman-Ben-Ari, Florian, & Mikulincer, 1999).

Death-Thought Accessibility (DTA) Hypothesis

The third main hypothesis at the root of TMT is the DTA hypothesis (Pyszczynski, Solomon, & Greenberg, 2015). On one hand, the prediction states that threats to any component of an individual's self-esteem or worldview should increase the accessibility of death-related thoughts, on the other hand, consensual validation of cultural belief systems and boosts to self-esteem should decrease their presence. A substantial number of studies have demonstrated such associations (see Hayes, Schimel, Arndt, & Faucher, 2010, for a review). For example, DTA (typically measured by the frequency of word fragments completed in death-related ways or by reduced latencies for the recognition of death-related words in lexical-decision tasks) has been found to increase when a highly nationalistic individual reads a paper that trivializes and criticizes his or her country (Schimel, Hayes, Williams, & Jahrig, 2007), when an atheist reads compelling evidence in support of intelligent design theory (Hayes et al., 2015), and when people are asked to recall times they had failed to meet prescribed standards of value (Ogilvie, Cohen, & Solomon, 2008). Conversely, DTA has been shown to decrease when individuals are given the opportunity to defensively dismiss a worldview threat (Schimel et al., 2007) and when people reaffirm their most important character values after an experimentally manipulated threat to their self-esteem (Hayes, Schimel, Faucher, & Williams, 2008).

Close Relationships: A Third Defensive Component

In addition to the traditional routes of self-esteem- and worldview-based distal defense, close relationships also appear to be beneficial when managing death-related anxiety (e.g., Florian, Mikulincer, & Hirschberger, 2002; Mikulincer & Florian, 2000). Beneficial not only because of their buffering properties but also because relying on loved ones for terror management purposes is far less likely to lead to the development of myriad unsavory outcomes that are often linked to the other buffer (e.g., support for extreme violence against worldview dissenters; Pyszczynski et al., 2006). According to Mikulincer, Florian, and Hirschberger (2003), there are several basic properties of close relationships that contribute to their role as an effective terror management source.

First, from an evolutionary perspective, close relationships positively affect the survivability and reproductive fitness of people (e.g., Buss & Schmitt, 1993). Initiating and maintaining close relationships increases physical security, increases the likelihood that people can attain resources in an efficient manner (e.g., food), and increases the chances of ensuring that offspring live long enough to reach maturity and reproduce. However, as with several of the other characteristic features of close relationships reviewed below, these evolved psychological processes do not, in and of themselves, serve a specific death-anxiety-buffering function.

Another relevant mechanism with evolutionary origins concerns the basic support, comfort, and proximity that close others provide in times of need. According to Bowlby's (1969, 1973, 1980) attachment theory, early interactions with caregivers shape either secure, anxious, or avoidant orientations that influence future interpersonal functioning in optimal or suboptimal ways. Anxious attachment is characterized by a strong desire for intimacy and closeness, coupled with concern about abandonment and views of the self as unlovable; avoidant attachment is characterized by discomfort with intimacy and closeness and excessive self-reliance (Mikulincer & Shaver, 2007). Individuals with a secure attachment style are comfortable depending on attachment figures during times of distress and are more likely to experience felt security (i.e., "a sense that the world is generally safe"; Mikulincer & Shaver, 2007, p. 21). Thus, for securely attached individuals, close relationships can be a viable source of anxiety relief and effective terror management. However, the mechanism in effect is, again, not specific to the threat or mortality. That is, anxiety reduction based on the attachment system occurs in response to a wide array of threats that are unrelated to death (Mikulincer, Hirschberger, Nachmias, & Gillath, 2001).

Close relationships can also directly alleviate the potential for intense primal fear associated with mortality, particularly concerning the fear of being forgotten and the loss of identity after death, by fostering a greater sense of symbolic immortality. This is achieved because close relationships provide the following: (a) a framework for biological procreation that facilitates a literal form of immortality associated with the propagation of one's genes, thoughts, and values (Lifton, 1979); (b) a way to feel part of a larger social entity (e.g., couples, group, community) that expands the boundaries of the self and makes one feel more connected with the world; and (c) an opportunity to experience passionate love in the form of intense ecstatic peak experiences associated with the feeling of being fully alive (Maslow, 1968). In this way, close relationships offer a platform through which to leave a lasting impression of identity, reducing the fear of being forgotten beyond biological death.

Finally, close relationships can be a source of worldview validation and self-esteem enhancement. From a developmental perspective, children are typically presented with standards and values prescribed by attachment figures (e.g., parents) who are socialization agents acting on behalf of their cultural worldviews (Pyszczynski, Greenberg, & Solomon, 1997). Children also have their first exposure to feelings of self-esteem, as caregivers move beyond constant unconditional positive regard to affection contingent on the child's living up to increasingly sophisticated culturally derived prescriptions of appropriate behavior (e.g., being praised for sharing toys). Over the developmental course, humans reach adulthood indoctrinated into the cultural worldview espoused by the many they have interacted with over their lifespan (e.g., parents, friends, teachers, romantic

partners, etc.). Most worldviews will emphasize the value in the formation and maintenance of close relationships, and many social institutions and rituals have been constructed to promote and protect romantic relationships (Baumeister & Leary, 1995; Goffman, 1972). Those who do not form or maintain close relationships are often perceived as unhappy, problematic, and dysfunctional (e.g., Peplau & Perlman, 1982), and interpersonal isolation is perceived as a personal deficiency and a deviant social state (e.g., Horney, 1945; Sullivan, 1953). In this way, close relationships can be an important source of meaning, order, and value. Equally so, because self-esteem is the product of successful adherence to cultural standards of value, the formation and maintenance of close relationships, in of itself, provides consensual validation for the view of one's self as a valuable constituent of one's social world (Bowlby, 1973; Walster, 1965) and that one has highly valued traits that are deemed attractive to others.

As empirical support for the buffering role of close relationships grew, the active ingredient of relationship-based security that is obtained from close relationship (i.e., attachment/felt security) was integrated with the traditional cultural worldview and self-esteem buffers under a tripartite account of terror management. In short, Hart, Shaver, and Goldenberg's (2005) tripartite security model suggests that the three "global" buffers are equally effective at managing death awareness, that threats to any one component of security system should result in compensatory defensive activation of the others, and that successful use of one of the three buffers will render the others temporarily redundant and unnecessary. Furthermore, despite some overlap among the buffers (i.e., the association between close relationships, worldview defense, and self-esteem striving), the model generally holds the view that there is something unique about close relationships that leads to the mitigation of death concerns in a functionally independent way.

Study Aims

Over 20 years of research suggests that close relationships serve a terror management function, which has led to a full integration of the buffer under more recent conceptions of TMT (Pyszczynski et al., 2015). However, the vast array of studies has examined quite disparate outcomes, has assessed a wide range of moderators and mediators, and has used varied experimental paradigms. To date, there has been no comprehensive synthesis of the research literature that delineates when close relationships serve to buffer death-related anxiety, under what conditions, on which specific component or outcome of close relationships, and for whom. Nor has there been a thorough investigation into the underlying mechanisms that contribute to the buffering role of close relationships. Here we bring together literature from the past 20 years to address these identified gaps.

Method

Identification and Selection of Studies

A comprehensive search of peer-reviewed studies published prior to July 7, 2017, was conducted using the following electronic databases: PsycARTICLES, PsycINFO, Science Direct, and Web of Science. The search term was "*terror management theory*" OR "*mortality salience*" OR "*death-thought accessibility*" OR "*death anxiety*" AND "*close relationship*"* OR "*relationship*"* OR "*intimacy*" OR "*couple*"* OR "*sex*"* OR "*casual sex*" OR "*sexual desire*" OR "*offspring*" OR "*mating*" OR "*marriage*" OR "*friends*"* OR "*interpersonal*" OR "*love*" OR "*commitment*" OR "*romantic*" OR "*adult attachment*" OR "*attachment theory*" OR "*security*" OR "*forgiveness*" OR "*trust*"* OR "*jealous*"* OR "*infidelity*" OR "*divorce*". A total of 6,653 records were extracted (702 from PsycARTICLES, 4,585 from PsycINFO, 897 from Science Direct, and 469 from Web of Science). Using the same search terms, three dissertations were found, although only one was retained.¹ To supplement these searches, reference lists of prior reviews, retained articles for the present review (30), and the TMT study repository (www.tmt.missouri.edu.au) were checked for additional studies; however, no new additional studies were discovered.

Inclusion and Exclusion Criteria

Any peer-reviewed studies that examined the association between interpersonal dynamics in close relationships (romantic or otherwise) and death-related processes outlined by TMT were considered in the present review. Furthermore, the studies had to have (1) been published in a peer-reviewed journal or unpublished within a dissertation; (2) reported in English; (3) used an adult sample (18+ years); and (4a) examined the construct of DTA or death anxiety as a correlate of interpersonal dynamics in close relationships or (4b) manipulated MS and examined an interpersonal factor in close relationships as either a moderator, mediator, or outcome variable. Studies with the following characteristics were excluded: (a) experimental studies without random assignment, (b) uncontrolled experimental studies, (c) qualitative studies, and (d) reviews. See Figure 1 for further details on the search outcomes and exclusion process.

Results

The results from the included studies are compiled into three separate overarching categories: relationship initiation processes, relationship maintenance processes, and finally what can be identified as potentially deleterious relationship processes. That is, various relationship-specific attitudinal and behavioral outcomes (e.g., conflict, risky sex, and jealousy) can, under certain conditions, be either adaptive or maladaptive to close relationships. Finally, the findings are clustered into separate groups within each of the three overarching categories

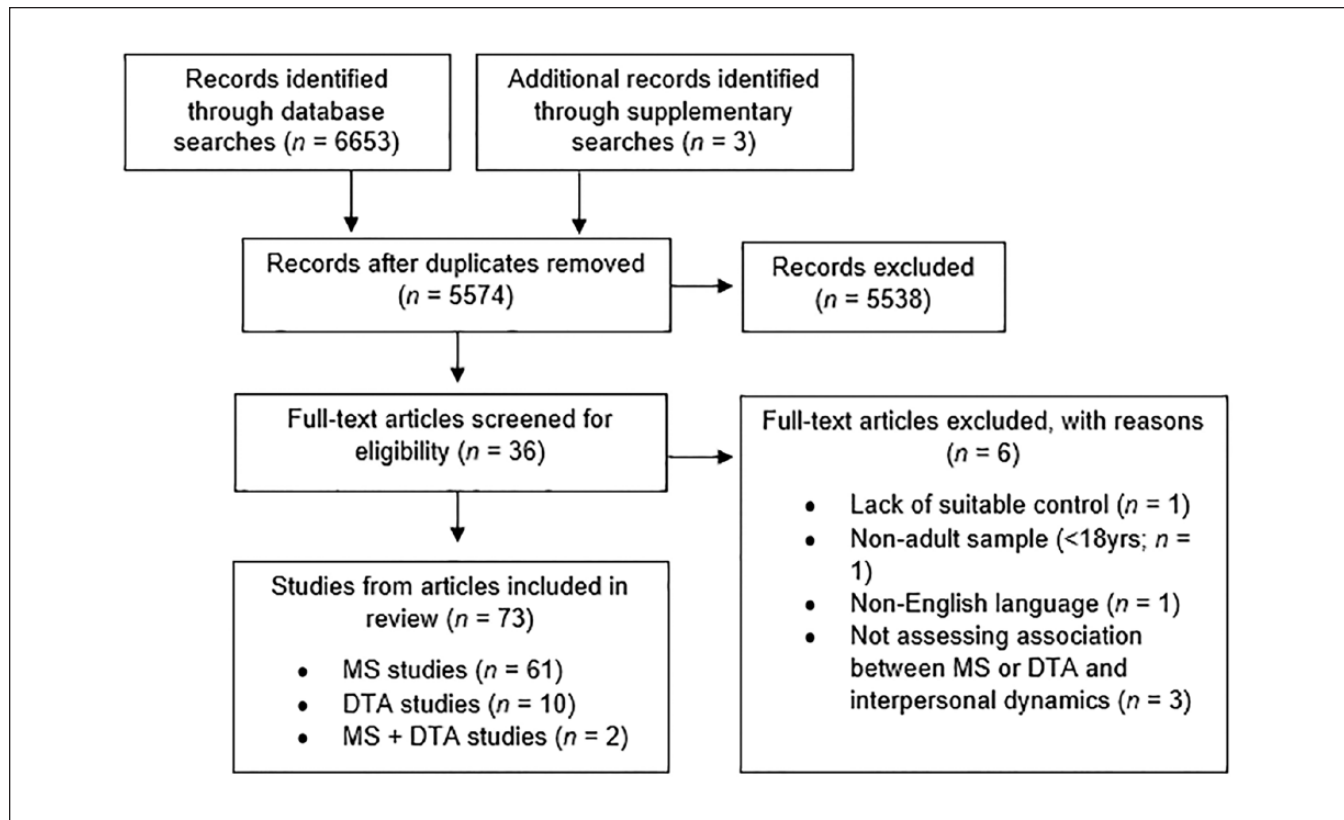


Figure 1. Search strategy and results.

Note. MS = mortality salience; DTA = death-thought accessibility.

based on shared themes (e.g., attraction, commitment, and conflict). See Figure 2 for a summary of the findings.

Relationship Initiation

Overview of studies. In total, 27 experimental studies from 13 articles tested the broad hypothesis that MS should increase peoples' interest in forging new close relationships using indicators of initiation such as self-perceptions of social competence, attraction, sexual desire, mate standards, and romantic beliefs. The majority of studies examined the potential moderating role of a variety of dispositional and situational factors. See Table 1 for a comprehensive summary of studies.

Relationship striving and competence. Two studies by Taubman-Ben-Ari, Findler, and Mikulincer (2002, Studies 1 and 2) examined how MS might increase peoples' desire to initiate social interactions by way of increasing self-perceptions of social skills and interpersonal competence (i.e., facilitators of relational striving). MS increased peoples' willingness to initiate social interactions more than the control. However, this finding was only observed among people with a secure attachment (i.e., low avoidance and anxiety). Study 2 revealed that participants low on attachment anxiety who

experienced MS perceived themselves as more competent in initiating relationships and managing conflicts, and those who were low in attachment avoidance found themselves more capable of disclosing personal information. Gender, social esteem (i.e., self-worth derived specifically from fulfilling social needs), and self-esteem could not explain the role of attachment moderating the effects of MS.

Attraction (sexual and nonsexual). Ten studies from five articles (Birnbau, Hirschberger, & Goldenberg, 2011; Landau et al., 2006; Morris & Goldenberg, 2015; Silveira et al., 2014; Smieja, Kalaska, & Adamczyk, 2006) found that MS increased both sexual and nonsexual attraction. These effects were moderated in some of the studies by attachment, gender, relationship context (e.g., romantic vs. nonromantic), and relationship time frame (e.g., one-night stand vs. short term).

Sexual attraction increased after MS induction in a study in which participants rated the attractiveness of an opposite-sex confederate after engaging in a mock speed-dating interaction with them (Smieja et al., 2006). The effect, however, varied depending on the participants' attachment style but not their dispositional self-esteem. MS (relative to the control) led those low in attachment avoidance (i.e., perhaps more secure individuals) to be more attracted to the confederate,

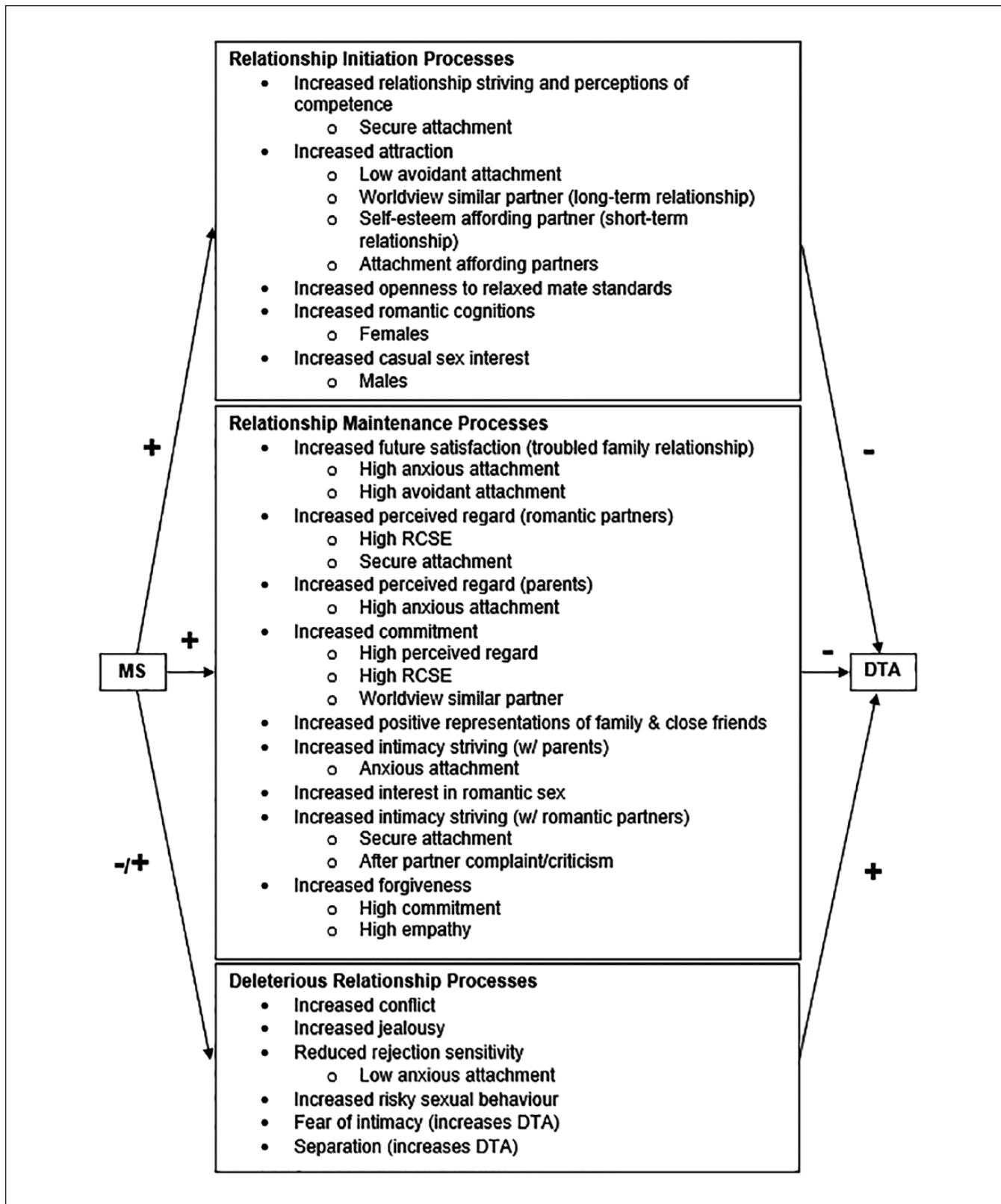


Figure 2. Summary of findings.

Note. + = positive association; - = negative association; second-tier dot points = moderators or mediators; MS = mortality salience; DTA = death-thought accessibility; RCSE = relationship-contingent self-esteem.

Table I. Summary of MS and DTA Studies Examining the Anxiety-Buffering Function of Close Relationships.

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Moderator/ mediator	DV(s)	Hypotheses	Results
Anglin (2014)	222 (138 women)—college sample	NA	The United States	MS	Attachment style prescribed. MS vs. denial pain was primed followed by the delay. Participants thought of an important person in their lives who they had not been getting along with and indicate what type of relationship it was and the severity of the problems. The DV was then assessed, followed by ratings of how long it would be until the participants' relationships improved.	PANAS-X + brief novel excerpt	MS	Attachment (RSQc)	Expectations (and motivation) for improvement and future relationship satisfaction (RST)	MS should motivate participants to repair their relationships and increase their expectations for improvement and future relationship satisfaction. Note: The study also explored the moderating effects of attachment in close relationships.	Summary of the main findings: MS increased relational strivings toward troubled family members among participants high in both attachment anxiety and avoidance (fearful-avoidant). MS also increased relational strivings in troubled friendships among fearful-avoidant participants when controlling for relationship importance.
Ande, Greenberg, and Cook (2002, Study 2)	55—college sample	NA	The United States	MS	MS vs. denial pain was primed followed by the delay, then the DV.	PANAS + word-search puzzle	MS	Gender	Romantic thoughts (wife, lover, marry, sex, romance, date, bride) vs. nationalistic thoughts (world-fragment completion task)	MS should trigger romantic relationship thoughts only among the female participants	Significant three-way interaction between gender, MS, and accessibility, $F(1, 51) = 5.87, p < .02, \eta^2 = .10$. Key pairwise: Unlike men, women did not show increase in nationalistic thoughts after MS, rather there was evidence of higher romantic relationship accessibility, $t(51) = 3.03, p < .01, \eta^2 = .15$ which was not present in men.
Ande et al. (2002, Study 3)	51 (females)—college sample	NA	The United States	MS	MS vs. denial pain was primed followed by a delay vs. no-delay manipulation prior to completion of DV.	PANAS + word-search puzzle vs. no delay	MS, delay vs. no delay	NA	Romantic relationship thought (wife, lover, marry, etc.) vs. nationalistic thoughts (world-fragment task)	MS should trigger romantic relationship thoughts only when a delay is administered prior to the DV but not when participants immediately complete the DV.	Significant three-way interaction between MS, timing of accessibility measure (delay vs. no delay), and accessibility, $F(1, 47) = 5.80, p = .02, \eta^2 = .11$. Key pairwise: After MS (as opposed to denial), relationship accessibility was higher with delay, rather than without delay, $t(47) = 3.25, p < .05, \eta^2 = .18$.
Ande et al. (2002, Study 4)	29 (males)—college sample	NA	The United States	Subliminal MS	Death vs. pain subliminally primed using a lexical-decision task. DV assessed.	NA	NA	NA	Romantic thoughts (wife, lover, marry, sex, romance, date, bride) vs. nationalistic thoughts (world-fragment completion task)	As participants are males, MS should trigger nationalistic accessibility but not romantic (as was the case with women in Studies 2 and 3)	Not significant two-way interaction, $F(1, 24) = 3.33, p < .08, \eta^2 = .12$. Key pairwise: Subliminal death primes increased nationalistic accessibility, $t(24) = 2.65, p < .02, \eta^2 = .23$, with no effect on relationship thoughts, $t < 1$. Unexpectedly, the pain prime increased relationship accessibility.
Ande et al. (2002, Study 5)	24 (female)—college sample	NA	The United States	Subliminal MS	Death vs. exam failure subliminally primed via lexical-decision task. DV assessed using lexical-decision task.	NA	MS	NA	Romantic thoughts vs. nationalistic thoughts (lexical-decision task)	Relative to the control, MS should trigger romantic relationship thoughts in the female sample.	Significant two-way interaction between prime and accessibility type, $F(1, 21) = 5.65, p < .03, \eta^2 = .21$. Key pairwise: As predicted, exposure to subliminal death prime increased reaction speed to relationship words than fail primes, $t(21) = 2.75, p < .05, \eta^2 = .23$.
Ande et al. (2002, Study 6)	48 (female)—college sample	NA	The United States	Subliminal vs. supraliminal MS	Subliminal vs. supraliminal "death" prime administered. Timing of DV assessment either immediate OR delayed. DV assessed using word-fragment questionnaire	PANAS-X and word puzzle task	Subliminal vs. supraliminal MS	Delay vs. no delay	Romantic thoughts (wife, lover, marry, sex, romance, date, bride; word-fragment completion task)	Subliminal prime should immediately increase relationship accessibility but may not after a delay; supraliminal priming will only increase relationship accessibility after a delay but not without one.	Significant two-way interaction between prime and timing of accessibility measure, $F(1, 44) = 4.11, p < .05, \eta^2 = .09$. Key pairwise: Not significant despite clear X interaction pattern.
Ande et al. (2002, Study 7)	81 (female)—college sample	NA	The United States	MS	Questionnaire used to prime American nationalism vs. food prior to MS vs. denial pain-salient induction. PANAS-X and word-search puzzle used as a delay. Finally, DV assessed.	PANAS-X and word puzzle task	Nationalism vs. food prime, MS	NA	Romantic thoughts (word-fragment completion task)	MS should trigger romantic relationship thoughts in the female sample unless an American prime is delivered prior to MS. The American prime should make salient nationalistic rather than relational worldview and cause women to respond to MS with nationalistic worldview defense (as did males in Studies 1 and 2).	Significant three-way interaction between prime, MS, and accessibility, $F(1, 77) = 4.97, p < .03, \eta^2 = .06$. Key pairwise: American prime + MS increased nationalistic accessibility compared with pain-salient participants and MS + food prime participants (both t s $> 2.52, p$ s $< .05, \eta^2$ s $> .08$. Replicate: Food prime + MS led female subsample to show high relationship accessibility as before.
Bellavia (2002, Study 1)	60 (36 women)—all in romantic relationships; $M_{\text{age}} = 23.45$ (months)	20.92	The United States	MS	MS vs. television prime was administered, followed by the PANAS-X and then the DVs.	PANAS-X	MS	RCE	Some of the DVs include measures of doubts about partners' qualities, suitability of partner, efforts to gain self-esteem from partners.	MS should intensify efforts for those with high RCE to seek their partner in part to enhance their self-worth.	Several hierarchical multiple regressions were conducted with RCE and MS predicting the DVs. RCE \times MS interaction was nonsignificant ($p = .07$); however, simple slope analysis revealed that high RCE increased the positive association between MS and reliance on partners for self-esteem. Other findings revealed that high RCE individuals were less likely to report that their partners wanted to change aspects of themselves under MS, specifically, $t(56) = 3.89, p < .001$, and that high RCE people had less doubts about their partners' suitability, $t(56) = -3.00, p < .01$. Note: Not all results have been reported because there were many analyses conducted.
Bellavia (2002, Study 2)	124 (72 women)—all in romantic relationships; $M_{\text{age}} = 18.06$ (months)	19.63	The United States	MS/DTA	Participants were allocated to either a partner availability or unavailability condition. This involved them having a photograph of their partner (vs. a tree) by their side during the task. They completed MS vs. denial pain prime, followed by the delay and then DVs.	PANAS-X	MS, partner availability	RCE	Word-completion task (DTA), same DVs as in Study 1	MS and partner unavailability would cause high RCE people to show the greatest dependence on their partners for their self-esteem.	Hypothesis was not supported by the findings. Only a main effect of RCE predicted participants' dependence on their partners for self-esteem enhancement. Other findings pertaining to DTA found that only those with low RCE experienced greater DTA in the MS condition, specifically, $\beta = 1.59, t(53) = 2.16, p < .05$. However, when the partner was unavailable, all experienced equally low DTA regardless of MS or control being primed, both t s(53) $< 7.1 , p = n.s.$

(continued)

Table 1. (continued)

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Mediator/ mediator	DV(s)	Hypotheses	Results
Bellavia (2002, Study 3)	134 (98 women)—all in romantic relationships; $M_{age} = 20.64$ (months)	20.61	The United States	MS	Participants were allocated to either a partner availability or unavailability condition. This involved them having a photograph of their partner (vs. a tree) by their side during the task. They completed MS vs. dental pain prime, followed by the delay and finally DVs.	PANAS-X	MS, partner availability, date of participation (before vs. after 9/11)	RCE	Worldview defense (evaluation of moral transgressors; evaluation of partner transgressions; support for heroes)	MS should lead to less worldview defense than the control, except when partners were made symbolically available for participants with high RCSE.	MS led to stronger preferences for heroes over transgressors when partners were symbolically available as opposed to unavailable, $F(1, 131) = 4.40, p < .05$. However, under non-MS control conditions, people showed an opposite effect, $F(1, 131) = 3.97, p < .05$. Another finding was that prior to 9/11, participants had a more positive interpretation of their partners transgressions when they were symbolically available, $F(1, 122) = 3.85, p < .05$; however, after 9/11, they perceived their partners' intentions no more positively under MS irrespective of partner availability.
Birnbaum, Hirschberger, and Goldenberg (2011, Study 1)	76 (36 women)—mixed sample—59% in a serious romantic relationship.	26.59	Israel	MS	Participants completed a filler questionnaire, followed by MS vs. dental pain prime and the delay. Participants were asked to imagine meeting an attractive person where sex was possible within the context of a one-night stand. The DV was then assessed.	Word-search puzzle	MS	Gender, Relationship status	Desire to have sex	MS should increase the desire to have sex with a stranger (one-night stand), but only among men as it is purported as a potentially self-esteem-bolstering activity only among men.	A 2-way ANOVA of MS and gender revealed a significant interaction, $F(1, 72) = 5.23, p < .05, \eta^2 = .07$. Key pairwise: MS caused a significant increase in men's desire to have a one-night stand, whereas women's desire to have a one-night stand was not significantly affected by priming condition. Relationship status had no effect on these findings.
Birnbaum et al. (2011, Study 2)	163 (94 women)—college sample—30% in a serious romantic relationship.	20.58	The United States	MS	Participants completed a filler questionnaire, followed by MS vs. dental pain and the delay. Participants were asked to imagine meeting an attractive person where sex was possible within the context of a short-term romantic relationship. The DV was then assessed.	Word-search puzzle	MS	Gender, relationship status	Desire to have sex	MS induction should increase both men and importantly, women's desire to have sex in the context of a short-term romantic fling, because putting sex into the context of romantic relationships may transform it from a conquest (i.e., relevant to male's self-esteem) to a meaningful emotional experience.	A two-way ANOVA of MS and gender on desire to have sex yielded a gender main effect, $F(1, 159) = 7.76, p < .01, \eta^2 = .05$, indicating that men's desire to have sex in the context of short-term romantic flings was higher ($M = 10.75$) than women's ($M = 9.21$). There was a MS main effect too, $F(1, 159) = 12.41, p < .01, \eta^2 = .07$, showing that the desire to have sex in the context of short-term romantic flings was higher in the MS condition ($M = 10.97$) than control condition ($M = 9.01$). The interaction was n.s. Relationship status had no effect on these findings.
Birnbaum et al. (2011, Study 3)	89 (51 women)—college sample—57% in a serious romantic relationship ($M = 25.69$ months)	26.43	Israel	MS	Participants were primed with MS vs. dental pain, followed by the delay task. Participants were then asked to imagine themselves in a romantic sexual encounter with a current (or past) partner, and also a sexual encounter with a current (or past) partner where sex was not associated with romance. The DV was assessed.	Word-search puzzle	MS	Gender, sexual scenario (romantic vs. physical)	Desirability of sexual scenarios.	Within the context of ongoing romantic relationships, MS should increase the desire to have a romantic sexual encounter and decrease the desire to have a physical sexual encounter.	A repeated measures ANOVA of MS and sexual scenario (within) on desirability ratings revealed a significant interaction, $F(1, 87) = 5.75, p < .05, \eta^2 = .06$. Key pairwise: MS caused a significant increase in the desirability of romantic sex, whereas the desirability of physical sex was not significantly affected by MS. *Gender was omitted from the analysis as it had no effect on outcomes.
Birnbaum et al. (2011, Study 4)	194 (98 women)—mixed sample—52% in a serious romantic relationship ($M = 26.99$ months)	24.15	Israel	MS	Participants were primed with MS vs. dental pain followed by the delay. Participants rated their overall desire to have sex and their desire to have sex with their partner and with a stranger (only if participants were in a relationship). Participants completed the Sex Motives Scale, followed by a filler questionnaire intended to minimize experimental effects on attachment measure which was next.	Word-search puzzle	MS	Gender, attachment (ECR)	Sexual desire and motives	Both anxiously and avoidantly attached individuals would be motivated to approach sex to avoid mortality concerns but for different reasons: Anxiously attached people should desire sex to assuage separation anxiety, whereas avoidantly attached people should desire sex to bolster their self-worth.	MS decreased sexual desire when attachment anxiety was low (-1 SD), $B = -0.19, p < .05$, but not when attachment anxiety was high ($+1$ SD), $B = 0.11, p = n.s.$ MS decreased women's sexual desire when their attachment avoidance was high, $B = -0.29, p < .05$, but not when it was low (n.s.). MS did not affect men's overall sexual desire when avoidance was either high or low. However, MS increased men's desire to have sex with a stranger when their avoidance was high, $B = 0.31, p < .05$, and decreased men's desire when avoidance was low, $B = -0.49, p < .01$. MS did not affect women's desire for sex with a stranger when avoidance was both high and low (sexual motives); MS promoted hedonism when attachment anxiety was high but not when low. Low avoidance and high anxiety led to increased insecurity sexual motivation after MS. High avoidance and low anxiety were associated with increased self-worth affirming motivation for sex post-MS.
Coolsen and Nelson (2002)	155 (92 females)—college sample—62% in a serious romantic relationship	19.6	The United States	MS	Participants completed the measure of agency (independent, assertive, competitive) and communion (compassionate, loyal, yielding, and sensitive to the needs of others) gender roles. Participants were assigned to a brief MS vs. control video condition. They then wrote about their thoughts during the video as a manipulation check, followed by the delay. Finally, the DV was assessed.	Experimenter led participants from one room to another	MS	Gender roles (BSRI)	Idealness rating of three attachment style descriptions (HSAS), desiring and avoiding close romantic attachment	MS should cause highly agentic individuals to endorse more strongly the avoidant attachment style and to view secure and anxious attachment as less appealing. In contrast, MS should cause highly communal individuals to endorse more strongly the secure and/or anxious-ambivalent styles and to perceive avoidance as less attractive.	MS had no significant effect on the appeal of avoidant, anxious, secure, or involvement in romantic relationships* ($ps > .05$) (Agency moderately). High agency participants in the MS condition rated anxious attachment less positively than those in the control condition, ($t(55) = 2.20, p < .04$). There was no effect of high and low agentic on secure attachment style following MS (n.s.); however, viewing agency as a whole (not median split) resulted in a significant interaction with MS on secure attachment style. High agentic participants rated avoidant attachment as more positive after MS (relative to control; $t(55) = 2.48, p < .02$). High agency under MS resulted in rating romantic relationships as less appealing, ($t(54) = 2.36, p < .03$). Low communion participants under MS rated anxious attachment more positively than those in the control, ($t(43) = 2.17, p < .04$).

(continued)

Table 1. (continued)

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Moderator/ mediator	DV(s)	Hypotheses	Results
Cox and Arndt (2012, Study 1)	43 (28 females)— college sample	18.89	The United States (not specified but assumed)	MS	Following a series of filler questionnaires, MS vs. uncertainty salience were primed, followed by the delay task. Finally, the DV was assessed: Participants rated how their current or most recent romantic partner perceives them and how they perceive themselves.	PANAS and words- search task	NA	NA	Perceived regard (self vs. partner)	Following MS, participants should exaggerate how positively their romantic partners see them (perceived regard) but not increase self- perceptions of regard.	A two-way mixed ANOVA of MS and perceived regard was performed on perceived regard scores. The interaction was significant, $F(1, 38) = 7.92, p = .01, d = 0.78$. <i>Key pairwise:</i> There was a significant difference between MS and uncertainty salience for romantic partner scores of perceived regard, $F(1, 38) = 5.23, p = .03, d = 0.61$, but not self-scores, $F(1, 38) = 0.17, p = .68, d = 0.07$.
Cox and Arndt (2012, Study 2)	46 (17 females)— college sample	18.84	The United States (not specified but assumed)	MS	Participants were primed for MS vs. intense physical pain salience (control), followed by the delay task. Finally, the DV was assessed: Participants rated how their current or most recent romantic partner perceives them and how they perceive themselves. In addition, participants rated how an average person sees them.	PANAS and words- search task	NA	NA	Perceived regard (self vs. partner vs. average person)	To the extent that the exaggeration in perceived regard after MS is specific to close relationships, participants should enhance perceptions of regard from their romantic partners following MS but not enhance perceptions of regard from an average person.	A 2 (MS vs. intense pain) \times 3 (perceived regard: self, romantic partner, average person) mixed ANOVA performed on perceived regard scores resulted in a significant interaction, $F(2, 82) = 3.97, p = .02, d = 0.70$. <i>Key pairwise:</i> Although there was no significant effect of MS within the average person or self-conditions, participants reported higher perceived regard from their romantic partners after MS than after pain salience, $F(1, 41) = 4.72, p = .04, d = 0.56$.
Cox and Arndt (2012, Study 3)	48 (19 females)— college sample—all involved in a romantic relationship (M = 16 months)	19.09	The United States (not specified but assumed)	MS	Participants were primed for MS vs. dental pain (control), followed by the delay task. Participants then rated how their current or most recent romantic partner perceives them and how they perceive themselves. Finally, the DV was assessed.	PANAS and words- search task	Perceived regard from partner (mediator)	Romantic commitment (DCI)		If people manage MS by turning to close relationships, in part, because of the regard they provide, participants should express more commitment to their romantic partners to the extent that their romantic partners are seen as offering positive perceptions of regard following MS.	Replicating Florian, Mikulincer, and Hirschberger (2002), there was an effect of MS on relationship commitment, $t(46) = 3.06, p = .004, d = 0.89$, with greater commitment scores after MS, rather than control. There was a relationship between MS and perceived regard from partner, $t(46) = 2.15, p = .04, d = 0.62$, with MS increasing degree of perceived regard from partner. Furthermore, perceived regard predicted commitment to partner while controlling for MS, $B = 0.34, SE = 0.35, t = 2.02, p = .05, d = 0.69$. Finally, when controlling for perceived regard, the previously significant effect of MS on commitment became nonsignificant, $B = -.023, SE = 0.52, t = -1.35, p = .19, d = 0.46$.
Cox and Arndt (2012, Study 4)	58 (42 women)— college sample—all involved in a romantic relationship ($M = 15.89$ months)	20.29	The United States (not specified but assumed)	MS/DTA	Participants were primed for MS vs. dental pain. They then engaged in the delay task. Participants were required to recall a time when their romantic partner held at separate times a positive and negative view of them. Finally, the DV was assessed.	PANAS search task	Perceived regard (positive vs. negative)	Word-completion task (DTA)		Activating thoughts of perceived regard from a romantic partner should attenuate the increase in DTA following reminders of death. However, undermining relational regard by priming negative cognitive representations of one's partner should increase DTA.	A two-way ANOVA of MS and perceived regard on DTA yielded the predicted interaction, $F(1, 54) = 11.13, p = .001, d = 0.91$. <i>Key pairwise:</i> Participants reported higher DTA after MS than after dental pain, $F(1, 54) = 10.75, p = .002, d = 0.90$; however, this MS-induced increase was eliminated when participants thought about receiving perceived regard from their romantic partners, $F(1, 54) = 2.02, p = .16, d = 0.29$.
Cox and Arndt (2012, Study 5)	106 (78 women)— college sample—all involved in a romantic relationship ($M = 20.52$ months)	19.38	The United States (not specified but assumed)	MS	Participants completed a packet of multiple filler questionnaires and the RCSE scale. Participants then were primed for MS vs. uncertainty salience, followed by the delay. Finally, the DV was assessed.	PANAS and words- search task	RCSE	Perceived regard (self vs. partner)		Exploring whether participants with high RCSE would show greater exaggerations in perceived partner regard following MS than would people with low RCSE.	Significant MS \times RCSE interaction on the level of perceived regard from a romantic partner, $B = -.045, SE = 0.25, t = 3.20, p = .002, d = 0.67$. <i>Simple slopes:</i> After MS, higher RCSE predicted greater perceived regard from a romantic partner, $B = 0.40, SE = 0.18, t = 2.95, p = .004, d = 0.62$. Furthermore, at +1 SD of RCSE, MS led to a greater exaggeration in perceived regard than the control, $B = -.034, SE = 0.23, t = 2.40, p = .02, d = 0.50$. At -1 SD of RCSE, MS was associated with lower levels of perceived regard relative to the control condition, $B = 0.30, SE = 0.23, t = 2.14, p = .04, d = 0.45$.
Cox and Arndt (2012, Study 6)	101 (58 women)— college sample—all involved in a romantic relationship ($M = 14.77$ months)	19.31	The United States (not specified but assumed)	MS	Participants were primed for MS vs. dental pain. They then engaged in the delay task. Participants were required to rate how their partner or parent would regard them. Finally, the DV was assessed.	PANAS and words- search task	Perceived regard vs. parent mediator), RCSE	Romantic commitment (DCI)		Participants should be more committed to their romantic partners to the extent that their partners but not their parents, serve as a basis of perceived regard after MS. Furthermore, these effects should be specific to high RCSE individuals, given that their self-worth is closely tied to their relationships with others.	Significant interaction of MS and RCSE on romantic partner perceived regard, $B = -.046, SE = 0.20, t = 3.17, p = .002, d = 0.64$. <i>Simple slopes:</i> +1 SD RCSE predicted greater exaggerations in perceived regard from partner after MS (p = .001). At -1 SD RCSE, MS led to lower perceived regard scores compared with control. MS and RCSE interacted in predicting commitment to partner ($B = -.042, SE = 0.38, t = 3.02, p = .003, d = 0.61$). <i>Simple slopes:</i> +1 SD RCSE led to greater commitment to romantic partner after MS ($p <$.001). +1 SD RCSE individuals showed greater commitment following MS; conversely, -1 SD RCSE participants reported less commitment after MS. Perceived regard mediated MS and +1 SD RCSE on relationship commitment.

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Table 1. (continued)

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Moderator/ mediator	DV(s)	Hypotheses	Results
Cox and Arndt (2012, Study 7)	174 (107 females)—college sample—all involved in a romantic relationship ($M = 14.70$ months)	18.71	The United States (not specified but assumed)	MS	Participants completed the attachment measure, followed by the MS vs. uncertainty-salient prime and then the delay task. The DV of perceived regard (parent vs. partner) was assessed, as was the DV that determined the extent to which romantic and parental relationships serve an attachment function.	PANAS and word-MS search task		Attachment (RSQs)	Perceived regard (partner vs. parent vs. self); Attachment fulfilling function of relationships (AFF)	Securely attached people should respond to MS with increased partner perceived regard, whereas anxiously attached participants should respond with increased parent-perceived regard. Avoidant participants should not show exaggerated perceived regard following MS. Moreover, MS may lead people toward relationships to fulfill attachment needs.	Significant three-way interaction between MS, anxiety, and avoidance was significant, $B = -.028$, $SE = 0.21$, $t = -2.39$, $p = .02$, $R^2 = .20$. Simple slopes: Secure individuals exaggerated perceived regard from their partner following MS, compared with control. Other attachment styles n.s. There was also a significant three-way interaction on parent-perceived regard. Simple slopes: Anxious attached exaggerated perceived regard from parent. With self-rated regard scores, anxious from relationships: Attachment avoidance was negatively associated with using romantic partners for proximity seeking, separation distress, safe haven, and as a secure base.
Cox et al. (2008, Study 1)	143 (92 women)—mixed sample	21.81	The United States (not specified but assumed)	MS/DTA	MS vs. dental pain was primed, followed by the delay task. Participants were then primed a positive interaction with their mother vs. negative interaction with their mother vs. positive interaction with an acquaintance vs. neutral interaction with an acquaintance. Finally, the DV was assessed.	PANAS and word-MS search task		Relationship manipulation	DTA (word-completion task)	A manipulation that emphasizes positive support from one's mother should attenuate post-MS DTA.	A two-way BS ANOVA of MS and parent prime (four conditions) on DTA revealed the predicted two-way interaction, $F(3, 135) = 2.79$, $p = .04$, $d = .66$. Key pairwise: MS resulted in significantly higher DTA than control in all relationship primes except, as hypothesized, the positive mother prime, where the effect of MS on DTA was attenuated ($p < .1$).
Cox et al. (2008, Study 2)	60 (40 women)—college sample	18.87	The United States	MS	Following a series of filler questionnaires, MS vs. loss of limb were primed, followed by the delay task. Participants were required to write about their parent/parent-like figure vs. a close friend vs. acquaintance condition. Finally, the DV was assessed.	PANAS and word-MS search task		Relationship manipulation	Worldview defense (MSTs)	MS should lead people to respond more negatively to cultural transgressors in the absence of a parent or close friend prime. Parents and close friends fulfill a TMT function, thus eliminating usual MS-worldview defense effects.	A two-way BS ANOVA of MS and relationship prime on mean transgression scores revealed a significant interaction, $F(2, 54) = 4.15$, $p = .02$, $d = .71$. Key pairwise: MS increased defensive reactions to moral transgressors in the neutral acquaintance condition, $F(1, 54) = 6.46$, $p = .01$, $d = .60$. In contrast, priming an interaction with parent or friend eliminated this effect ($F_s < 1$). There was no such difference between conditions under control condition.
Cox et al. (2008, Study 3)	78 (49 women)—college sample	18.84	The United States	MS	After a practice IAT and personality fillers, MS vs. personal failure were primed, followed by the delay task. Participants had to visualize a romantic partner vs. parent vs. acquaintance. Finally, the DV was assessed.	PANAS and word-MS search task		Relationship manipulation	Implicit self-esteem	Activating parental and romantic relationships following MS should lead people to feel secure and, thus, exhibit higher implicit feelings of self-esteem.	A two-way BS ANOVA of MS and relationship prime on self-esteem scores revealed a significant interaction, $F(2, 70) = 3.64$, $p = .03$, $d = .65$. Key pairwise: Although there was no effect of MS in the neutral acquaintance prime condition, both parent and romantic partner prime participants evidenced higher implicit self-esteem after MS than control, both $F_s(1, 70) \geq 4.23$, $p_s \geq .04$, $d_s \geq .42$.
Cox et al. (2008, Study 4)	54 (24 women)—college sample	20.03	The United States	MS	Participants were primed for MS vs. dental pain, followed by the delay task. The DV was then assessed.	PANAS and word-MS search task		NA	Parent evaluation	MS should bias participants toward positive representations of their parents, making it easier to recall positive interactions with them and harder to recall negative interactions with them.	A two-way mixed ANOVA of MS and evaluation (positive vs. negative) on ease of recall (vividness of either positive or negative encounters with mother) scores was conducted revealing a significant interaction between MS and evaluation condition, $F(1, 52) = 8.53$, $p = .005$, $d = .82$. Key pairwise: Significant difference between MS and control conditions for both positive, $F(1, 52) = 6.10$, $p = .02$, $d = .68$, and negative scores, $F(1, 52) = 4.30$, $p = .04$, $d = .53$. After MS induction, people had an easier time recalling a positive interaction with their mother and a more difficult time recalling a negative interaction.
Cox et al. (2008, Study 5)	75 (49 women)—college sample	18.7	The United States	MS	Participants completed a filler questionnaire followed by MS vs. dental pain and the delay. Next, participants were given a personality profile describing a fictitious partner in the next room (men received characteristics like their mother, women of their father or of another parent [control]). Participants then evaluated their partner and prepared a seating arrangement.	PANAS and word-MS search task		Partner attributes (similar to parent vs. nonparent)	Partner evaluation and seated proximity to partner	MS should lead people to evaluate a target person who resembles their parent more positively and to sit closer to that person in an anticipated interaction task.	A two-way BS ANOVA of MS and partner profile (similar to own parent vs. dissimilar) on evaluations of partner revealed a significant interaction, $F(1, 69) = 3.87$, $p = .05$, $d = .49$. Key pairwise: When the target partner held characteristics similar to the participants' parents, MS induction resulted in more positive ratings of the partner than under dental pain conditions, $F(1, 69) = 5.99$, $p = .02$, $d = .68$. The same analysis as above on the distance between the participant chair and partner's chair resulted in a significant interaction, $F(1, 70) = 4.68$, $p = .03$, $d = .64$. Key pairwise: In the parent-like condition, MS resulted in closer proximity than dental pain, $F(1, 70) = 4.72$, $p = .03$, $d = .57$.
Cox et al. (2008, Study 6)	100 (56 women)—college sample	19.07	The United States	MS	Participants completed the attachment measure, followed by the MS vs. dental pain prime and delay task. Finally, the DV was assessed.	PANAS and word-MS search task		Attachment (RSQs)	Allocation of phone call credit allowance to four relationship partners: Parent, sibling, romantic partner, or close friend.	Attachment security should predict increased preference for romantic partners, whereas those with high attachment anxiety and low avoidance should prefer parents.	Those scoring low on attachment anxiety and avoidance (secure people) reported increased relative preference for a romantic partner after MS than a control condition. In contrast, those scoring low on avoidance and high on anxiety under MS conditions showed an increased preference for a parent.

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Table 1. (continued)

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Moderator/mediator	DV(s)	Hypotheses	Results
Florian et al. (2002, Study 1)	94—college sample—all in romantic relationships (41% married)	25 (median)	Israel	MS	Participants completed a neuroticism scale. Following on participants were primed for MS vs. a neutral topic vs. pain and then they completed the delay. Finally, the DV was administered.	Filler-distractor questionnaire	MS	Gender, neuroticism (N-EPI)	Romantic commitment (DCI)	MS should increase relationship commitment.	ANOVA revealed significant effect of MS on commitment to partner, $F(2, 91) = 4.63, p < .05, \eta^2 = .10$. Key pairwise: Participants reported more commitment under MS than in neutral or control conditions. Neuroticism negatively predicted commitment to partner $B = -0.26, p < .01$. Lack of interaction indicated no moderation of neuroticism or gender. Furthermore, the main finding was not mediated by global aversive feelings of the MS vs. neutral vs. pain primes, thus strengthening conclusion.
Florian et al. (2002, Study 2)	60 (41 females)—college sample—all in romantic relationships (42% married)	23 (median)	Israel	MS	Participants completed a neuroticism scale. Following on participants were primed for MS vs. a neutral topic. Participants completed the delay task. Then, primed for romantic commitment vs. radio. Finally, the DV was administered.	Filler-distractor questionnaire	MS	Gender, neuroticism (N-EPI), romantic commitment prime	Worldview defense (MST)	Insofar as relationship commitment acts as a death-anxiety buffer, priming close relationship commitment should reduce the need to activate worldview defenses following MS induction.	Significant interaction between MS prime and commitment salience, $F(1, 56) = 5.88, p < .05, \eta^2 = .10$. Key pairwise: When thoughts about romantic commitment were not made salient (no romantic commitment salience), MS led to a more severe evaluation of the transgressors than it did in the neutral condition. However, when romantic commitment was made salient, the effect of MS did not significantly influence severity ratings, $F < 1$.
Florian et al. (2002, Study 3)	100 (55 female)—college sample—all in romantic relationships (51% married)	24 (median)	Israel	DTA	Participants completed a neuroticism scale. Participants assigned to romantic relationship problems, academic problems, or control conditions. Finally, DV was assessed.	NA	Prime	Gender, neuroticism (N-EPI)	DTA (word-fragment completion task)	Making salient the possibility of disruption of relationship commitment (conflicts and problems) should undermine the anxiety-buffering properties of relationships, thus increasing DTA	Significant one-way ANOVA on DTA for prime conditions, $F(2, 97) = 9.45, p < .01, \eta^2 = .17$. Key pairwise: Participants in romantic relationship problem condition displayed higher DTA ($M = 1.55$) than participants in the academic problems ($M = 0.80$) and control ($M = 0.53$) conditions. Secondary analyses: Neuroticism and gender did not moderate the main finding. Furthermore, global aversive feelings did not mediate the prime effect on DTA.
Friedrich Rieger, Dratsch, and Bente (2015)	249 (all females)—mixed sample—heterosexual with German origin (43.3% single)	24.35	Germany	MS	After a set of filler questionnaires, MS vs. falling an examination were primed, followed by the delay. Participants then received an in-group (German) vs. out-group (Arab) candidate as a potential date via the dating mobile application, and participant-candidate similarity match percentage was manipulated (75% vs. 25% similarity). Manipulation checks were made, and the DV was assessed.	Watching a short neutral video	MS	Group membership	Attraction and interest in dating	H1: Similar in-group candidates should be evaluated more positively. H2: MS should decrease attraction to an out-group candidate in comparison with an in-group candidate. H3: Candidates who are in-group members and similar should be more attractive after MS. H4: After MS, similarity should affect attraction only for in-group members.	Main effect for similarity was significant (H1). In contrast to predictions, in-group members were not preferred over out-group members under MS (H2). A three-way BS ANOVA of MS, group membership, and similarity as predicting desire to date revealed a significant three-way interaction, $F(1, 241) = 4.13, p < .04, r = .13$. Key pairwise: Under MS, similarity increased the attraction to a candidate only if the candidate was an in-group member (H4). Candidates who were both similar and in-group members raised the most attraction under conditions of MS.
Goldenberg, Pyszczynski, McCoy, Greenberg, and Solomon (1999, Study 1)	73—college sample	24.74	The United States	MS	Neuroticism measured. MS vs. watching television salience was primed followed by the delay. Appeal of sex assessed thereafter.	PANAS + word-search puzzle	MS	Neuroticism (N-EPI)	Appeal of sex (physical and romantic aspects of the sexual experience)	MS should make thoughts of the physical aspects of sex highly aversive when neuroticism is high but not low	2 x 2 ANOVA revealed a significant interaction, $F(1, 69) = 6.32, p = .014$. Key pairwise: All n.s. (dubious reporting claiming $p = .056$ for hypothesis-testing comparison was significant)
Goldenberg et al. (1999, Study 2)	76—college sample	20.73	The United States	DTA	Neuroticism was measured. Participants NA were primed for physical vs. romantic aspects of sex. DTA was measured	Participants NA	Sex prime	Neuroticism (N-EPI)	DTA (word-fragment completion task)	Priming physical aspects of sex should increase DTA only among those with high neuroticism	2 x 2 ANOVA revealed a significant interaction, $F(1, 72) = 4.17, p = .045$. Key pairwise: High-neuroticism group had higher DTA after physical sex prime than romantic prime, $F(1, 72) = 5.39, p = .024$
Goldenberg et al. (1999, Study 3)	105—college sample	22.15	The United States (two different universities)	DTA	Neuroticism was measured. Participants NA were primed for physical vs. romantic aspects of sex. Participants then primed with thoughts of love vs. food. Finally, DTA was measured	Participants NA	Sex prime	Neuroticism (N-EPI), thought induction	DTA (word-fragment completion task)	Same as in Study 2, except that thinking about love after being primed for physical aspects of sex will reduce or eliminate an increase in DTA	Key pairwise: High-neuroticism participants who thought about physical sex and were then induced to think of romantic love exhibited lower DTA than participants induced to think about a good meal, $F(1, 97) = 5.14, p = .026$
Goldenberg, McCoy, Pyszczynski, Greenberg, and Solomon (2000, Study 2)	86—college sample	24.04	The United States	MS	Body esteem was measured. Filler items followed. MS vs. watching television was primed before appeal of physical aspects of sex assessed thereafter.	Word-search puzzle	MS	Body esteem (BES)	Appeal of physical sex	People high in body esteem should respond to MS with positive attitudes toward physical sex, whereas people low in body esteem should not.	2 x 2 ANOVA revealed significant interaction: $F(1, 82) = 5.36, p = .023$. Key pairwise: Greater appeal of physical sex for high than low body esteem participants within MS condition, $F(1, 82) = 8.60, p = .004$.
Goldenberg et al. (2003, Study 2)	112 (64 women)—college sample	22.65	The United States (not specified but assumed)	MS	MS vs. dental pain was manipulated prior to the delay. The DV was finally administered.	Word-search puzzle	MS	Gender	Sexual and emotional jealousy	MS should lead men to find sexual infidelity more distressing; in contrast, women should find emotional infidelity more distressing after MS induction.	Gender x MS significant interaction, $b = 2.76, SE = 0.959, W = 8.31, p = .004$. Key pairwise: For men, MS (compared with dental pain) increased the probability of choosing sexual infidelity as more upsetting than emotional infidelity, $b = -1.43, SE = 0.695, W = 4.21, p = .04$. Females under MS, compared with control, showed reduced concern with sexual infidelity (and greater concern with emotional infidelity), $b = -1.34, SE = 0.661, W = 4.11, p = .043$.

(continued)

Table 1. (continued)

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Moderator/ mediator	DV(s)	Hypotheses	Results
Goldenberg et al. (2003, Study 3)	111 (54 women)—college sample	22.27	The United States (not specified but assumed)	MS	MS manipulated by 15 true-false questions about death vs. watching television. DV assessed. Participants were assessed on how much value they place on sex in a romantic relationship.	Word-search puzzle	MS	Gender, sex-value as contingency for self-worth	Sexual and emotional jealousy	MS should increase the aversiveness of sexual infidelity only among men who place relatively high value on sex.	The Sex-Value \times MS interaction only significant for men, $b = -1.69$, $SE = 0.79$, $W = 4.6$, $p = .024$. Key pairwise: When sex-value was high among men, MS increased the likelihood for men to find sexual infidelity more threatening than emotional infidelity, $b = 3.71$, $SE = 1.84$, $W = 4.07$, $p = .044$. In contrast, men low on sex-value when primed for MS vs. control exhibited decreased likelihood to choose sexual infidelity as more threatening than emotional infidelity, $b = -4.09$, $SE = 2.01$, $W = 4.16$, $p = .041$.
Goldenberg, Cox, Pyszczynski, Greenberg, and Solomon (2002, Study 1)	118 (66 females)—college sample	24.08	The United States	DTA	Neuroticism assessed followed by similarity vs. dissimilarity between humans and animals prime and prime to think about the physical vs. romantic aspects of sex. Finally, the primary DV was assessed, followed by essay evaluations.	NA	Creaturliness prime	Gender, neuroticism (N-EPI), aspects of sex prime	DTA (word-fragment completion task)	Reminders of human similarity to other animals should increase DTA after the physical sex prime (relative to the romantic sex prime). However, when humans are seen as unique the physical sex prime should not increase DTA.	A three-way BS ANOVA of creaturliness prime, sex prime, and neuroticism revealed the Predicted Creaturliness \times Sex \times Prime interaction, $F(1, 110) = 5.07$, $p = .026$. Key pairwise: Within the humans are animals (similarity) condition, DTA increased after the physical sex prime than after the romantic sex prime, $F(1, 110) = 4.57$, $p = .035$, whereas in the humans uniqueness condition, the difference was n.s. ($p = .28$).
Goldenberg et al. (2002, Study 2)	129 (74 females)—college sample	20.09	The United States	MS	Neuroticism assessed. Participants assigned to read an essay (similarity vs. dissimilarity between humans and animals) MS vs. filling examination was then primed. Delay administered. DV assessed.	PANAS, word-search puzzle	MS	Gender, neuroticism (N-EPI), creaturliness prime	Appeal of physical sex	Creaturliness reminders should lead MS-induced participants to find physical aspects of sex less appealing. In contrast, human uniqueness (opposite of creature prime) should mitigate an effect of MS on reduced appeal of physical sex.	Significant two-way ANOVA interaction of MS and prime on appeal of physical sex, $F(1, 121) = 7.19$, $p = .008$. Key pairwise: Participants found physical sex less appealing after MS than examination failure, $F(1, 121) = 4.67$, $p = .033$, whereas in human uniqueness condition, this difference was n.s. ($p > .10$). Within MS condition, humans are animals prime led to finding physical sex less appealing than those in humans are unique prime, $F(1, 121) = 5.83$, $p = .017$. No difference in control condition.
Hirschberger, Florian, and Hinkeliner (2002)	168 (105 females)—college sample—one third involved in serious romantic relationship	23.74	Israel	MS	Self-esteem and ideal mate selection standards measures administered first. MS vs. physical pain vs. neutral. Participants then assigned to "mate selection" condition vs. "no mate selection" condition. DV assessed	Filler-distractor questionnaire	MS, mate selection condition	Self-esteem (RSES)	Shame and guilt (SSGS)	Under MS, people should show readiness to compromise their ideal romantic partner to secure a close relationship even when this compromise entails a negative emotional cost such as a threat to their self-esteem.	Significant two-way ANCOVA interaction (MS primes and self-esteem on readiness to compromise in mate selection standard 5 factors), $F(10, 146) = 2.02$, $p < .05$. Summary brief: High self-esteem persons reported less readiness to compromise than low self-esteem. Overall, MS increased readiness to compromise mate selection standards to form long-term relationships. MS was also found to weaken resistance to compromise that high self-esteem persons revealed in the non-MS conditions (similar to low self-esteem persons).
Hirschberger, Florian, and Korny (2003)	174 (85 females)—college sample—102 were in a romantic relationship.	23 (median)	Israel	MS	MS vs. watching television was primed. Distractor task was then administered. Participants divided into either positive feedback, complaint, or criticism conditions. DV assessed.	Filler-distractor questionnaire	MS	Gender, feedback prime	MS, feedback Desire for intimacy (IS-5)	Under non-MS control conditions, striving for romantic intimacy will be lower under conditions of negative feedback (complaint, criticism) than under conditions of positive feedback (praise). However, under MS, strivings for intimacy should be high to the extent that no significant differences will be found among the three feedback conditions.	Two-way interaction for MS and partner's feedback was significant, $F(2, 162) = 3.74$, $p < .05$, $\eta^2 = .08$. Other interactions n.s. Key pairwise: Control condition effect on feedback styles was significant, $F(2, 162) = 12.67$, $p < .01$, $\eta^2 = .17$. Scheffe post hoc revealed partner's positive feedback led to higher intimacy striving than complaint, which in turn led to higher intimacy strivings than criticism. In the MS condition, the ANOVA was n.s. Furthermore, MS led to higher intimacy striving to a hypothetical partner than control when the partner expressed either complaint, $F(1, 162) = 5.14$, $p < .01$, or criticism, $F(1, 162) = 19.87$, $p < .01$, but not when expressing positive feedback.
Hoppe, Fritzsche, and Kornay (in press, Study 1)	198 (117 females)—college sample—all in romantic relationships	24.3	Germany	MS	MS vs. dental pain and either parental vs. nonparental romantic relationship vs. control were primed, followed by the delay task. Finally, the DVs were administered.	PANAS	MS, parental prime	NA	Implicit partner affect (positive feelings toward partner), commitment (DCI)	Imagining a nonparental relationship will increase positive feelings toward partners and increase commitment following MS.	Significant two-way ANOVA interaction of MS and parental prime on implicit partner affect, $F(2, 175) = 3.95$, $p = .02$, $\eta^2 = .04$. MS increased positive feelings toward one's partner in the nonparental condition but not the parental or control, $F(1, 175) = 6.71$, $p = .01$, $d = 0.74$. Commitment was nonsignificantly predicted by the IVs.
Hoppe et al. (in press, Study 3)	100 (57 females)—college sample—all in romantic relationships	24.3	Germany	DTA	Parental vs. nonparental romantic relationships were primed. Finally, DTA was measured	NA	Parental prime	Attachment (ECR-R)	Word-completion task (DTA)	Thought of positive nonparental relationships (vs. parental) will reduce DTA, and this should be more likely among securely attached people	Participants who thought about their relationship without offspring reported less DTA than relationships with offspring, (98) = -2.09 , $p = .04$, $d = 0.42$. Avoidant attachment moderated this association, such that the anticipation of nonparental future relationship resulted in less DTA only among those with low avoidance (-1 SD).

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Table 1. (continued)

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Moderator/ mediator	DV(s)	Hypotheses	Results
Kosloff, Greenberg, Sullivan, and Wise (2010, Study 1)	114 (66 females)	18.8	The United States (not specified but assumed)	MS	Participants completed filler questionnaires and the MS vs. intense physical pain primes followed by delay. Participants were presented with a time frame manipulation (short-term dating vs. long-term dating). Finally, participants had to rate people in two dating profiles (an attractive yet worldview-opposed person vs. a less attractive worldview-supporting person)	PANAS neutral filler questionnaire	MS	Gender, relationship time frame	Dating profile evaluation based on target qualities (attractiveness and worldview stance)	MS should elicit preference for a potentially self-esteem-boosting (e.g., highly attractive) partner in a short-term dating context and for a potentially worldview-reinforcing (e.g., who shares one's religion) partner in a long-term dating context.	A three-way mixed ANOVA interaction of MS × Relationship Time Frame × Target Qualities was apparent, $F(1, 106) = 13.28, p < .005$. <i>Key pairwise:</i> Within the short-term relationship condition, MS participants exhibited significantly greater interest in dating the highly attractive/religiously different than dating the average attractive/religiously same target, $F(1, 106) = 17.89, p < .001, d = 1.18$, whereas under pain-salient condition, this was not happening. Within the long-term condition, MS participants (relative to control) showed significantly greater interest in dating the average/religiously same target than in dating the highly attractive/religiously different target, $F(1, 106) = 7.11, p < .05, d = 1.07$. A three-way MS × Target Qualities × Gender interaction was significant, $F(1, 58) = 4.20, p < .05$. <i>Key pairwise:</i> Consistent with the hypothesis, relative to uncertainty salience, MS motivated greater interest in the sex-withholding/self-esteem-affording target among both males, $F(1, 58) = 7.71, p < .05, d = 1.06$, and females, $F(1, 58) = 5.71, p < .05, d = 0.82$. For the sex-providing/self-esteem threatening target, males showed greater interest than females in the uncertainty-salient condition, $F(1, 58) = 6.69, p < .05, d = 0.86$. Males and females in the MS condition did not differ in their interest toward the sex-affording/self-esteem threatening target, due to the fact that MS males expressed less interest in this target than control males, $F(1, 58) = 7.97, p < .05, d = 1.00$.
Kosloff et al. (2010, Study 2)	62 (35 females)	18.4	The United States (not specified but assumed)	MS	MS vs. uncertainty salience was primed, followed by the delay task. All participants experienced the short-term dating condition and received two dating profiles: (a) a prudish/self-esteem-boosting target; (b) a sexually available/self-esteem-threatening target. Finally, the DV was assessed.	PANAS-X and neutral filler questionnaire	MS	Gender	Dating profile evaluation based on target qualities (sexual availability and provision of self-esteem)	Under short-term dating preference conditions, MS (compared with control) should elicit preference for a prudish yet self-esteem-boosting individual but not a sexually available yet self-esteem-threatening individual.	A mixed ANOVA with BS variables of MS and relationship time frame and construct relevance revealed a significant three-way interaction, $F(4, 164) = 2.71, p < .05$. <i>Key pairwise (self-esteem):</i> Regarding activation of self-esteem constructs, MS participants in the short-term dating condition provided more self-esteem-relevant word completions relative to MS participants in the long-term condition, $F(1, 82) = 7.24, p < .01, d = .92$; TV-salient participants in the short-term condition; and belongingness-salient participants in the short-term condition ($ps < .05$). <i>Key pairwise (worldview):</i> MS participants in the long-term dating condition provided more worldview-relevant completions relative to MS participants in the short-term condition and TV- and belongingness-salient participants in the long-term condition ($ps < .05$).
Lam, Morrison, and Smeesters (2009, Study 1)	58—college sample	NA	The United States	MS	MS vs. denial pain was primed followed by the delay and several filler tasks. The DV was assessed and sexual history questionnaire administered.	PANAS	MS	Gender, sexual history	Willingness to engage in risky sexual behavior	Men should report a greater willingness than women to engage in risky sexual behavior after MS but not control prime.	A two-way ANCOVA of MS and gender predicting willingness to engage in risky sexual behavior with sexual history as covariates was conducted resulting in a significant interaction between MS and gender, $F(1, 52) = 5.38, p = .02, \eta^2_p = .10$. <i>Key pairwise:</i> While controlling for sexual history, although men and women reported an equal willingness in the control condition, $F(1, 52) = 1.12, p = .29, \eta^2_p = .02$, men reported greater willingness to be risky than women under MS.
Lam et al. (2009, Study 2)	79—mixed sample	NA	The United States	MS	Filler questionnaires were given, followed by MS vs. denial pain and the delay and several filler tasks. Participants then answered two questions about their desired number of future sexual partners. The DV was then assessed and sexual history questionnaire administered.	PANAS	MS	Gender, sexual history, need for intimacy (NFI; mediator)	Desired number of future sexual partners	Men after MS induction, relative to women in the same condition, would have a lower NFI and hence desire more sexual partners. These results were not expected under control conditions.	MS and gender predicting desired sexual partners with sexual history as covariates revealed a significant interaction, $F(1, 73) = 4.60, p < .04, \eta^2_p = .06$. <i>Key pairwise:</i> Under MS, men wanted to have more future sexual partners than did women, $F(1, 73) = 10.34, p < .005, \eta^2_p = .12$. This gender difference was n.s. under control. The same analysis was conducted for NFI revealing a significant interaction, $F(1, 73) = 4.66, p = .03, \eta^2_p = .06$. <i>Key pairwise:</i> Men had a lower NFI than women in the MS condition, $F(1, 73) = 5.78, p < .02, \eta^2_p = .07$, but not in the control.
Lam et al. (2009, Study 3)	110—college sample	NA	Netherlands	MS	MS vs. denial pain was primed followed by the delay and filler tasks. Participants were then offered remuneration plus a "gift" (either a pen publicizing sexual health resources ["risky choice"] or three condoms ["safe choice"]). Finally, participants completed the sexual history questionnaire.	PANAS	MS	Gender, sexual history	Behavioral measure of intentions to have risky sex.	Men in the MS (but not control) condition would be more sexually risky, or less likely to select the condoms, than women.	Main effects for MS, gender, and past sexual history were observed. Participants more likely to choose the pen under MS condition (but not control) than condoms ($p < .01$); men were more likely to choose the pen than women ($p < .01$), and participants were less likely to choose the pen the higher their number of past sexual partners ($p < .05$). A significant interaction between condition and gender emerged, $\chi^2 = 7.55, p < .01$. Men were more likely than women to choose the pen over condoms in the MS condition, relative to the control.

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Table 1. (continued)

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Moderator/mediator	DV(s)	Hypotheses	Results
Landau et al. (2006, Study 1)	64 (46 women)—college sample	NA	The United States (not specified but assumed)	MS (subliminal)	A subliminal DEAD vs. PAIN prime was administered via a lexical-decision task. Participants were shown six pictures of six notably attractive women and were asked to evaluate each on six dimensions: Attractive, alluring, beautiful, desirable, inviting, and sexy. Finally, a manipulation check was administered.	NA	MS	Gender	Attractiveness/sexual appeal of women	MS should lead men, but not women, to give lower objective ratings of the physical attractiveness and sexual appeal of alluring women.	A two-way BS ANOVA of subliminal prime and gender on attractiveness ratings revealed a main effect of gender, such that men rated the female targets as more attractive ($M = 5.5$) than did women ($M = 4.5$). This was qualified by the Predicted Prime \times Gender interaction, $F(1, 60) = 6.84, p = .01$. Key pairwise: MS caused a significant decrease in perceived attractiveness among men, $F(1, 60) = 6.28, p = .02$. In the pain prime condition, men showed increased attraction, $F(1, 60) = 9.06, p = .01$. There were no sex differences in the MS condition, as one may expect.
Landau et al. (2006, Study 2)	17 (all heterosexual males)—college sample	NA	The United States (not specified but assumed)	MS	MS vs. dental pain were primed, followed by the delay. Participants had a 4-min interaction with an alluring female confederate. After the interaction, both participant and confederate rated the interaction—importantly, how much their partner was trying to behave with respect to characteristics indicating sexual intent: Sexy, promiscuous, attractive, etc.	PANAS-X	MS	Mate value (MVI; mediator)	Sexual/friendly/neural intent toward attractive female	Men who encounter an attractive, friendly woman under MS would be less likely to admit sexual intent but rather admit self-perceived friendliness. Controlling for self-perceived mate value.	A three-way mixed ANOVA of MS and self vs. other ratings and sexual vs. friendly intent revealed a three-way interaction, $F(1, 15) = 4.40, p = .05$. Key pairwise (sexual intent): MS led men's self-perceived sexual intent to be lower than other-perceived sexual intent, $F(1, 15) = 7.45, p = .01$. This effect was found only under MS and not dental pain. Key pairwise (friendliness): Men perceived themselves as more friendly ($M = 4.4$) than the confederate ($M = 4.2$), $F(1, 15) = 7.10, p = .02$. No interaction with MS. Secondary: Mate value did not mediate the effects of MS on willingness to admit sexual intentions. Overall, hypotheses confirmed.
Landau et al. (2006, Study 3)	55 (all heterosexual males)—college sample—45% in a romantic relationship	NA	The United States (not specified but assumed)	MS	Two filler items provided initially to aid cover story. MS vs. dental pain was then primed, followed by the delay task. Participants were shown a photograph of a seductive- vs. wholesome-looking attractive young woman. Finally, the DV was assessed.	PANAS-X	MS	Photograph prime	Attraction and interest in dating	MS should reduce attraction to seductive women but not to wholesome-appearing women.	A two-way BS ANOVA of MS and appearance on attraction revealed a significant interaction, $F(1, 52) = 6.97, p = .01$. Key pairwise: Men were less attracted to the seductive woman after MS, $F(1, 52) = 20.88, p < .01$, whereas there was no effect of MS in the wholesome woman condition ($p = .41$).
Landau et al. (2006, Study 4)	86 (45 women—all heterosexual)—college sample—42% in a romantic relationship.	NA	The United States (not specified but assumed)	MS	MS vs. uncertainty vs. neutral was primed after two filler items, followed by the delay. Participants were presented with photographs of opposite-sex individuals pre-rated as sexually inviting, 9.5 to 10 on a rating, and who had been evaluated by 800+ on the website "hotornot.com." Finally, the DV was assessed.	PANAS-X	MS	Gender	Attraction and interest in dating	Men, but not women, will deny their attraction to—and interest in—a sexually provocative opposite-sex other following MS.	A two-way BS ANOVA of MS and gender on attraction revealed a significant interaction, $F(2, 74) = 3.09, p = .05$. Key pairwise: MS-primed men showed less attraction for the female target-primed men ($p < .02$) and MS-primed women judging male targets ($p < .01$). Secondary: As in Study 3, there were no effects of relationship status or length of current relationship.
Mikulincer and Florian (2000, Study 5)	110—college sample	22 (median)	Israel	MS	Participants completed attachment scale. Filler followed by MS vs. control prime. Finally completing scale tapping desire for intimacy in romantic relationships.	questionnaire	MS	Attachment (HSAS and ECR), self-esteem (RSES), neuroticism (N-EPI)	Desire for intimacy (IS)	Securely attached people would react to MS with heightened search for intimacy.	The Condition \times Attachment interaction was significant. Simple effects revealed that MS led to higher desire for intimacy than did the control condition only among secure persons. For avoidant and anxious-ambivalent persons, MS had no effect on the desire for intimacy.
Mikulincer, Florian, Birnbaum, and Malishkevich (2002, Study 1)	108 (52 female)—college sample—71% in a romantic relationship or married.	24 (median)	Israel	DTA	Partner separation vs. partner death vs. control primed. Participants completed the DV. Completed attachment measure.	NA	Separation prime	Gender, attachment (ECR)	DTA (word-fragment completion task)	H1: Thinking about separation from a relationship partner OR the death of such a partner should lead to more DTA than due to control condition. H2: The significant effect of separation reminders on DTA would mainly be among people high in attachment anxiety.	H1: Two-way ANOVA for condition and gender on DTA, $F(2, 102) = 5.40, p < .01, \eta^2 = .10$. Scheffe tests indicated thoughts of separation from partner or thoughts of partner's death increased DTA ($M = 1.44, M = 1.63$) more than control ($M = 0.64$). H2: The effect of separation reminders on DTA was in fact moderated by attachment anxiety only at $+1$ SD, $b = 1.31, t(103) = 3.50, p < .01$.
Mikulincer et al. (2002, Study 2)	90 (47 females)—college sample—64% in a romantic relationship or married.	23 (median)	Israel	DTA	Participants given separation/relationship NA vs. separation/acquaintance vs. control condition. DV assessed. Attachment assessed	NA	Separation prime	Gender, attachment (ECR)	DTA (word-fragment completion task)	H1: Thoughts of separation from close relationship partner should lead to more DTA than thoughts of separation from mere acquaintance or academic failure (no significant difference between controls) H2: Separation reminders increasing DTA should be among participants high in attachment anxiety.	H1: Two-way ANOVA for condition and gender on DTA, $F(2, 84) = 9.35, p < .01, \eta^2 = .18$. Scheffe tests indicated separation/relationship condition led to higher DTA ($M = 1.43$) than acquaintance ($M = 0.60$) and control conditions ($M = 0.47$). Main effect for gender and Condition \times Gender interaction n.s. H2: DTA regressed onto indication of relationship separation thoughts was significant only when attachment anxiety was $+1$ SD, $b = 1.29, t(86) = 4.59, p < .01$.
Mikulincer et al. (2002, Study 3)	116 (59 females)—college sample—85% in a romantic relationship or married.	26 (median)	Israel	DTA	Participants primed for final separation vs. long-term separation vs. brief separation vs. neutral TV program (control). DV then assessed. Finally, trait attachment ascertained.	NA	Separation prime	Gender, attachment (ECR)	DTA (word-fragment completion task)	H1: The longer the duration of imagined separation from a close relationship partner, the higher the DTA. H2: The effect of separation length on DTA would be mainly found when attachment anxiety would be high vs. low.	H1: Two-way ANOVA significant main effect of condition on DTA, $F(3, 108) = 102.8, p < .01, \eta^2 = .21$. Main effect of gender and Condition \times Gender n.s. Scheffe tests indicated higher DTA after final separation thought ($M = 1.72$) than long-term separation ($M = 1.10$). Both final and long-term primes resulted in greater DTA than brief ($M = 0.59$) or control ($M = 0.53$) primes.

(continued)

Table 1. (continued)

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Moderator/ mediator	DV(s)	Hypotheses	Results
Miller (2003, Study 1)	157—mixed sample	NA	The United States	MS	Relationship closeness was assessed. Relationship assessment scale was provided at pretest. Next, the pretest measure about previously described hypothetical relationship problem. MS vs. death of partner vs. relaxation control primed. The posttest relationship assessment scale and the posttest measure about hypothetical relationship problem ended the study.	NO DELAY	MS	Relationship closeness (RCI)	Pre-post ratings of relationship quality (RAS) and response to hypothetical conflict	H1: Imagining partner's death, compared with participant's own death, should result in more favorable attitudes about participants' relationship and less likely to view relationship problems as troubling (compared with pretest scores). H2: Those imagining their own death should be more likely than controls to express favorable attitudes about participants' relationship and view relationship problems as less troubling.	As expected, imagining the death of one's partner is associated with increased relationship satisfaction. Those imagining partner loss showed significant ($p < .05$) increase in postmanipulation RAS scores. Relationship closeness was associated with higher scores on the RAS measure as expected. H2: ANOVA of hypothetical relationship problem scores by condition was significant: $F(2, 155) = 4.41, p < .05$. Key pairwise: In contrast to Hypothesis 2, MS induction made participants more angered (not less) by the relationship problem in contrast to both partner death and control conditions ($p < .05$).
Morris and Goldenberg (2015)	218 (116 women)—mixed sample—all heterosexual	34/78	The United States (not specified but assumed)	MS	MS vs. pain was primed using a true/false questionnaire. A delay task was then administered. Participants then were assigned to view images of a sexualized woman merged with an object vs. the same woman and object as separate entities. They were informed the advertisement image was either for Budweiser vs. Maxim magazine. Participants then rated the DV.	PANAS-X	MS	Gender, image manipulation (merged vs. separate)	Attraction to target female	Men primed with MS should report lower attractiveness ratings for sexualized (as opposed to objectified) women, compared with men in the control condition. However, if literal objectification reduces this threat, under conditions of MS, men should be especially attracted to women who have merged (compared with not merged) with an object.	A four-way ANOVA of MS, image, ad type, and gender was conducted on participants' attractiveness ratings of the model in the advertisement. The hypothesized three-way interaction between MS, gender, and image was significant, $F(1, 202) = 9.92, p = .002$. $\eta_p^2 = .05$, and the MS \times Image interaction was significant only for men, $F(1, 217) = 11.52, p = .001$. $\eta_p^2 = .10$. Key pairwise: For men, MS decreased attractiveness ratings when the model was not objectified. In contrast, when the model was objectified, MS increased the appeal, and men rated attraction higher than men in the control condition. Furthermore, men primed with MS rated the model as more attractive when she was merged with (objectified), compared with separate from an object (nonobjectified).
Silveira et al. (2014)	32—right-handed heterosexuals (males with normal or corrected normal vision)	24/3	Finland (not specified but assumed)	MS/fMRI	Participants were primed for MS vs. no-prime. They then viewed attractive gray scale opposite-gender faces in blocks (or control) and were presented with implicit vs. explicit vs. control questions evaluating how appealing the person in the picture. Neural activity was measured with fMRI.	No delay	MS	Gender; evaluation type	Attraction to opposite-sex person	The heterosexual sample should perceive attractive opposite-sex persons with higher mating motivation under MS. The depictions of potential mating partners are expected to elicit neural activation in left frontal and prefrontal brain areas.	<i>Behavioral findings:</i> Males appeared to be more in favor of "meeting" (implicit measure of attraction) an attractive woman under MS than in the no-prime condition, $t = 14.82, p < .05$. There were no effects of MS on the explicit question "attractive?" Neural findings: Between MS and no-prime conditions for both men and women, respectively, no significant differences in neural activation was found during explicit evaluation of attractive faces; however, during implicit evaluation, MS modulated the neural correlates of face processing. Both genders exhibited significantly higher activation in the left anterior insula and adjacent left IFFC in processing the opposite-sex faces specifically after MS.
Snijels, Kalska, and Adamczyk (2006)	116 (53 females)—college sample	NA	Poland (not specified but assumed)	MS	Participants completed a scale tapping partner characteristics that they viewed as ideal in a romantic partner. Self-esteem and attachment were then ascertained. MS vs. watching TV was primed, followed by a filler-distractor task. Participants then entered the speed-dating room and had 4 min of interaction. After this, participants completed the "rating forms." DV: Finally, emotion was assessed using the PANAS.	Filler-distractor questionnaire	MS	Self-esteem (RSES), attachment (ECR), ideal mate selection standards (IMSS)	Potential partner's attractiveness	Under MS-prime conditions, high self-esteem participants should assess potential partners as more attractive than in the control condition. Among low self-esteem participants, there would be no difference between MS and control conditions. Furthermore, securely attached individuals would assess potential partners more favorably in MS (as opposed to control), whereas insecurely attached individuals would assess potential partners less favorably in the MS (as opposed to control) condition.	Contrary to predictions, self-esteem did not moderate the relationship between MS and the DV. Key pairwise (a): MS resulted in nonavoidant participants to be significantly more favorable than moderately avoidant, $F(1, 97) = 6.21, p = .01$ and highly avoidant participants, $F(1, 97) = 4.96, p = .03$. *A significant interaction between MS and avoidance was found on global impressions, $F(1, 97) = 5.94, p = .02$. Key pairwise (b): Participants under MS assessed the first person they met significantly higher when compared with control, $F(1, 97) = 7.22, p < .01$. In contrast, moderately avoidant people assessed the first date less favorably in MS. Among highly avoidant, the pattern was similar to moderate but n.s. In control condition, nonavoidant participants, $F(1, 97) = 10.55, p < .01$, rated the first date as significantly less attractive than highly avoidant, $F(1, 97) = 6.90, p = .01$. The more anxiously attached the participants, the more favorably they would assess the first date. $F(1, 97) = 0.26, p < .01$.
Smith and Massey (2013, Study 1)	92—college sample	NA	The United Kingdom (not specified but assumed)	MS	Participants were primed for MS vs. dental pain, followed by a delay task. Participants were presented with Hazan and Shaver's (1987) descriptions relating to secure, insecure anxious, and insecure ambivalent attachment styles and had to select which best described them. Finally, the DV was assessed.	Arithmetic problems	MS	Attachment (HSAS)	Endorsement of romantic ideology (RBS)	Exploratory study on the effect of MS on the insecurely attached vs. securely attached with respect to romantic love.	A two-way BS ANOVA of MS and attachment (security vs. insecurity) on romantic belief scale resulted in a significant interaction, $F(1, 88) = 5.51, p = .022$. $\eta_p^2 = .058$. Key pairwise: No difference between MS and control conditions for securely attached participants, but MS had a significant effect on the insecurely attached, $t(34) = 2.91, p = .01$. After MS, the insecurely attached were significantly more romantic than securely attached, $t(46) = 2.39, p = .02$. No such difference under control condition.

(continued)

Table 1. (continued)

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Moderator/ mediator	DV(s)	Hypotheses	Results
Smith and Massey (2013, Study 2)	89—college sample	NA	The United Kingdom (not specified but assumed)	MS	Participants completed the self-esteem measure before choosing which attachment description most accurately represented them. MS vs. dental pain was primed followed by the delay task. Next, participants completed the DVs in counterbalanced order.	Arithmetic problems	MS	Attachment (HSAS), self-esteem (RSES)	Endorsement of romantic ideology (RBS), relationship assessment (RAQ)	Further exploration into the interaction between attachment style and love by measuring both ideological and more interpersonal dimensions of love following MS.	(Romantic belief): A two-way BS ANCOVA of MS and attachment predicting romantic belief with self-esteem as a covariate resulted in a significant interaction, $F(1, 84) = 4.01$, $p = .048$, $\eta^2 = .046$. Key pairwise in the control condition, securely attached participants were significantly higher in romantic belief than insecurely attached; however, MS raised the insecurely attached scores to be level with securely attached scores. There was no difference between MS and control for the securely attached. Furthermore, no significant differences for insecurely attached participants either between MS and control. (Relationship status): Despite securely attached people being in romantic relationships significantly more than insecurely attached, relationship status did not affect romantic belief, nor interact with MS. (Relationship assessment): Relational preoccupation rose under MS for the insecurely attached but reduced for securely attached participants.
Stradman and Schimmel (2006)	266 (198 females)— college sample—all in a romantic relationship (median = 18 months)	19.8	The United States	MS	Participants attachment style and trait self-esteem were determined. Worldview similarity vs. difference vs. no prime (control) was primed. Following on, MS vs. physical pain was primed followed by a delay task. Finally, the DV was assessed	PANAS	MS	Self-esteem (RSES), attachment (ECR), worldview prime	Relationship commitment (RCS)	MS should decrease commitment to the romantic relationship when participants think about differences between their own vs. their partner's worldview.	A two-way BS ANOVA revealed a significant interaction between MS and worldview prime, $F(1, 174) = 3.99$, $p < .05$, $\eta^2 = .05$. Key pairwise: Following MS, the worldview differences prime led participants to report being less committed to their relationship relative to dental pain, $t(84) = 2.07$, $p < .05$. Similarities prime did not lead to significant differences among MS and dental pain. <i>Secondary (mood)</i> : Attachment avoidance negatively correlated with commitment, $t(174) = -6.22$, $p <$.01. Attachment anxiety and avoidance did not interact with MS. Secure attachment was significantly positively correlated with commitment, $p < .05$.
Taubman-Ben-Ari (2004, Study 1)	73 (35 women)— college sample	24 (median)	Israel	MS	Self-esteem and fear of intimacy were assessed. Next, MS vs. watching television was primed. Delay task administered. DV assessed.	Filter-distractor questionnaire	MS	Gender, self-esteem (RSES), fear of intimacy (FIS)	Willingness to engage in risky sexual behavior	MS would increase the appeal of sexual intercourse as a means of terror management. However, fear of intimacy should moderate this relationship and lead persons with high fear of intimacy to prefer less risky sex, and those low on FOI to prefer more involvement in risky sex, compared with the control condition.	Two-way ANOVA for condition and gender on sexual behavior resulted in main effect of condition, $F(1, 72) = 4.26$, $p < .05$, $\eta^2 = .06$, and gender, $F(1, 72) = 46.78$, $p < .001$, $\eta^2 = .40$. As predicted, MS led to higher willingness to engage in risky sexual behavior ($M = 4.05$) than the control ($M = 3.51$). Men reported a higher willingness to engage in risky sex ($M =$ 4.52) than women ($M = 2.88$), interaction was n.s. <i>Moderation</i> : Condition \times Fear of Intimacy was significant, $B = 0.98$, $t(72)$ $= 2.15$, $p < .05$. Inclusion of gender did not change results so was excluded. MS led to higher willingness to be involved in risky sex, mainly among persons with low fear of intimacy. Self-esteem did not explain the effects of fear of intimacy, thus emphasizing the unique role of intimacy perceptions on this effect.
Taubman-Ben-Ari (2004, Study 2)	68 (38 women)— college sample	25.81	Israel (multiple universities)	DTA	Risky sex vs. favorite food was primed. Finally, the DV was assessed	NA	Prime	Gender	DTA (word-fragment completion task)	Thoughts of involvement in risky sex should lead to higher DTA than in the control condition.	Two-way ANOVA for condition and gender on DTA revealed a main effect for condition, $F(1, 67) = 14.81$, $p < .001$, $\eta^2 = .19$, so that thoughts of risky sex led to higher DTA ($M = 1.06$) than in the control condition ($M = .43$). There was also a main effect of gender, $F(1, 67) = 3.81$, $p < .05$, $\eta^2 = .06$, such that men had higher DTA ($M = .93$) than women ($M = .55$). Gender \times Condition interaction was n.s.
Taubman-Ben-Ari (2004, Study 3)	74 (44 women)— college sample	25	Israel	DTA	Fear of intimacy vs. neutral were primed. Finally, the DV was assessed.	NA	Prime	Gender	DTA (word-fragment completion task)	Thoughts about fear of intimacy would lead to higher DTA than in the control condition.	Two-way ANOVA for condition and gender on DTA revealed a main effect for condition, $F(1, 73) = 7.59$, $p < .01$, $\eta^2 = .10$, indicating that fear of intimacy condition led to completion of more death-related words ($M = 90$) than control ($M = 31$). There was a main effect of gender, $F(1, 73) = 4.35$, $p < .05$, η^2 $= .06$, such that men had higher DTA ($M = .93$) than women ($M = .45$). Gender \times Condition was n.s.
Taubman-Ben-Ari, Fridler, and Mikulincer (2002, Study 1)	104 (66 women)— college sample	23 (median)	Israel	MS	Trait attachment measured, self-esteem measured, and so was social desirability. Following on, MS vs. watching TV were primed. DV was assessed.	Filter-distractor questionnaire	MS	Gender, self-esteem (RSES), attachment (ASS)	Willingness to initiate social interactions	MS should lead to higher willingness to initiate social interactions than control. However, the effect should be found mainly among persons who score low in attachment anxiety and avoidance (i.e., securely attached persons)	ANOVA yielded significant main effect for condition, $F(1, 100) =$ 6.31, $p < .05$, $\eta^2 = .08$, and gender, $F(1, 100) = 4.47$, $p < .05$, $\eta^2 = .05$. Condition \times Gender was n.s. Key pairwise: MS led to more willingness to engage in social interaction than control. Furthermore, women reported higher willingness than did men. <i>Moderation</i> : MS led to higher willingness to initiate social interactions mainly among persons scoring low on attachment anxiety and avoidance.

(continued)

Table 1. (continued)

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Moderator/ mediator	DV(s)	Hypotheses	Results
Taibman-Ben-Ari et al. (2002, Study 2)	100 (58 women)— college sample	23 (median)	Israel	MS	Attachment style, self-esteem and social esteem were measured first. MS vs. watching TV primed. DV assessed.	Filler-distractor questionnaire	MS	Gender, self-esteem (RSES), social esteem (TSBI), attachment (ASS)	Interpersonal competence (ICQ)	MS induction should lead to higher reports of interpersonal competence than the control condition. However, the effect should be found mainly among persons who score low in attachment anxiety and avoidance (i.e., securely attached persons)	Multivariate ANOVA yielded significant main effect for condition, $F(5, 92) = 2.85, p < .05$. Neither gender nor interaction was significant. <i>Key pairwise:</i> Compared with control, MS led to higher appraisals of competence in the areas of initiating relationships ($M = 3.4$ vs. $M = 2.96$), disclosing personal information ($M = 3.38$ vs. $M = 3.10$) and making negative assertions to a partner ($M = 3.46$ vs. $M = 3.18$)—no effect on conflict management and support for provision. <i>Moderation:</i> MS led to higher appraisal of competence in initiating relations and managing conflicts among persons low on attachment anxiety; effect of MS on disclosing information was moderated by attachment avoidance.
Taibman-Ben-Ari et al. (2002, Study 3)	108 (58 women)— college sample	23 (median)	Israel	MS	Attachment style, self-esteem and social esteem were measured first. MS vs. watching TV primed. Delay administered. DV assessed.	Filler-distractor questionnaire	MS	Gender, self-esteem (RSES), social esteem (TSBI), attachment (ASS)	Rejection sensitivity (RSQb)	MS induction should lead to lower reports of rejection sensitivity than a control condition. This effect would be found mainly among persons who scored low on attachment anxiety and avoidance (i.e., securely attached persons)	Two-way ANOVA for condition and gender on rejection sensitivity score yielded significant main effect for condition, $F(1, 104) = 4.61, p < .05, \eta^2 = .06$, and gender, $F(1, 104) =$ $6.38, p < .05, \eta^2 = .08$. MS led to lower reports of rejection sensitivity ($M = 6.10$) than control ($M = 7.30$). Furthermore, men reported higher rejection sensitivity ($M = 7.40$) than women ($M = 6.10$). Gender \times Condition was n.s. <i>Moderation:</i> MS led to lower rejection sensitivity only among persons below median on attachment anxiety. This was unique to attachment style as neither self- nor social esteem could explain it.
Van Tongeren, Green, Davis, Worthington, and Reid (2013, Study 1)	134 (82 females)— college sample—89.2% single	19/13	The United States	MS	Participants were primed for MS vs. pain followed by the delay. They recalled and rated a specific hurtful offense that had occurred within the previous month and rated how committed they are to the relationship, as well as indicated how much empathy they felt toward their offender, and finally, they completed the DV.	PANAS and word- search task	MS, hurtful recollection	Relationship commitment (RCS), empathy (BEA; mediator)	Forgiveness (FS)	Relationship commitment should moderate the association between MS and forgiveness, and empathy may mediate the interactive effect of MS and relationship commitment on forgiveness.	A regression of MS and commitment on predicting forgiveness yielded a significant interaction, $B = 0.22, SE = 0.31, t = 2.84, p$ $= .005$. <i>Simple slopes:</i> Greater forgiveness was observed when the relationship commitment was high and MS ($B = 0.87, SE$ $= 0.86, t = 10.92, p < .001$) relative to control ($B = 0.56, SE$ $= 0.22, t = 7.35, p < .001$) was primed. MS elicited significantly less forgiveness when the victim was less committed, $B =$ $-0.30, SE = 1.18, t = -3.88, p < .001$. <i>Mediation:</i> n.s. effect of empathy mediating MS and commitment on forgiveness 95% BCI [-.006, .080]
Van Tongeren et al. (2013, Study 2)	69 (26 females)— college sample	20/27	The United States	MS	Participants were primed for MS vs. intense physical pain salience, followed by the delay task. Next, participants recalled and rated a specific offense that had occurred within the previous 3 months by either a high vs. low relationship commitment individual. Participants engaged in a manipulation check, rated their empathy toward their offender and, finally, the DV.	PANAS and word- search task	MS	Hurtful recollection (high- commitment offender vs. low- commitment offender), empathy (BEA; mediator)	Forgiveness	MS should elicit less forgiveness toward offenders to whom the victim is less committed and that this effect should be mediated by empathy toward the offender.	MS and relationship commitment predicting forgiveness while controlling for hurtfulness of offense yielded a significant interaction, $F(1, 62) = 9.67, p = .003, \eta^2 = .14$. <i>Key pairwise:</i> Under MS, participants were less forgiving ($p = .004$) of offenders in the low-commitment condition ($M = 28.36$) than toward those in the high-commitment condition ($M = 39.57$). Compared with those in the control, MS participants reported less forgiveness of offenders in the low-commitment condition ($p = .017$); more forgiveness to those in the high-commitment condition was n.s. ($p = .058$). <i>Mediation:</i> Empathy partially mediated the interactive effect of MS and commitment on forgiveness 95% BCI [1.72, 14.23]
Wakimoto (2011, Study 2)	72 (56 women)— college sample	Not reported	Japan	MS	Self-esteem and attachment were measured, followed by MS vs. leisure activity and then the delay task. Participants were then required to recall the positive conduct of their friend within the past 6 months and then report on the DV.	J-PANAS and distraction task	MS	Attachment (J-AASS), self-esteem (J-RSES)	STD of close friend's positive conduct	It is predicted that following MS, participants should report a smaller STD of positive conduct from close friends. H2: Individuals high in attachment anxiety should perceive the positive conduct of their friend as closer in temporal distance under MS, relative to control.	A GLM analysis with MS, attachment anxiety, and avoidance predicting STD was conducted and significant, $R^2_{adj} = .16, F(9,$ $60) = 2.51, p = .02$. MS main effect was significant indicating the STD of a friend's positive conduct was smaller under MS than in control. <i>Secondary moderation (attachment):</i> The STD was closer when attachment anxiety was low, compared with high. Furthermore, when attachment avoidance was high, the experience was felt as closer at high levels of anxiety, vs. low (self-esteem) n.s.

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Table 1. (continued)

Report	Sample	Age	Location	Protocol	Context	Delay	IV(s)	Moderator/mediator	DV(s)	Hypotheses	Results
Wakimoto (2011, Study 3)	54 (20 women)—college sample	Not reported	Japan	MS	Self-esteem and attachment were measured, followed by MS vs. leisure activity and then the delay task. Participants were then required to recall their own positive and negative conduct toward a close friend within the past 6 months and then report on the DV.	J-PANAS and distraction task	MS	Attachment (J-AAS), self-esteem (J-RSES)	STD of one's own positive and negative conduct toward a close friend	Under MS, positive memories may be perceived as temporally closer and raise expectations for future closeness and continuity of friendships; under MS conditions, participants may rate these interactions as more temporally distant—alternately, MS may motivate relational striving to make amends and decrease the STD of the negative conduct.	(Positive conduct STD): A GLM of MS, attachment anxiety and avoidance (and various covariates) as predicting ease of STD was significant, $R^2_{adj} = .42$, $F(9, 37) = 4.77$, $p = .00$. <i>Key pairwise</i> : A main effect of MS was present, indicating STD of positive conduct was smaller under MS, relative to control condition, $F(1, 37) = 5.32$, $p = .03$, $E2 = .05$. Experiences that were easier to recall were perceived as closer in temporal distance. (Negative conduct STD): Model was significant, $R^2_{adj} = .34$, $F(9, 31) = 4.77$, $p = .01$. <i>Key pairwise</i> : No effect of MS was observed. STD became greater as elapsed time increased and again, experiences easier to recall were perceived as closer in temporal distance.
Yaakobi, Mikulincer, and Shaver (2014, Study 4)	120 (54 women)—college sample—married without children nor pregnant	26 (median)	Israel	MS	Attachment was premeasured before the day of the study. On the day, participants were primed for MS vs. neutral salience, followed by parenthood vs. vacation primes. Finally, the DV was measured.	Prime	MS	Attachment (ECR), parenthood prime	Desire for intimacy (IS)	Asking people to think about becoming a parent should reduce the activation of defenses such as heightened desire for romantic intimacy, following MS.	An hierarchical regression of MS, parenthood thoughts and avoidance yielded a significant three-way interaction on desire for romantic intimacy, $B = -.020$, $p < .05$. MS increased desire for intimacy in the control, but lowered it in the parenthood thoughts condition only when attachment avoidance was low (-1 SD, $B = -.059$, $p < .01$) but not when high ($+1$ SD).

Note. IV = Independent Variable; DV = Dependent Variable; BS = Between-Subjects; BCI = Bootstrapped Confidence Intervals; GLM = General Linear Model; RCSE = Relationship-Contingent Self-Esteem; MS = Mortality Salience; DTA = Death-Thought Accessibility; PANAS = Positive and Negative Affect Scale (Watson, Clark, & Tellegen, 1988); PANAS-X = Positive and Negative Affect Schedule—Expanded Form (Watson & Clark, 1992); ECR-RS = Experiences in Close Relationships, Relationship Structures Questionnaire (Fraley, Heffernan, Vancay, & Brumbaugh, 2011); RSM = Relationship Satisfaction Measure (Wakimoto, 2011); RCSE = Relationship Contingent Self-Esteem Scale (Knee et al., 2008); RCS = Relationship Commitment Scale (Rusbult, Martz, & Agnew, 1998); ECR = Experience in Close Relationships Scale (Brennan, Clark, & Shaver, 1998); BSRI = Bem Sex-Role Inventory (Bem, 1974); HSAS = Hazan and Shaver's Attachment Scale (Hazan & Shaver, 1987); DCI = Dimensions of Commitment Inventory (Adams & Jones, 1997); RSQA = Relationship Scales Questionnaire (Griffin & Bartholomew, 1994); AFF = Attachment Features and Functions measure (Tancredy & Fraley, 2006); MSTS = Multidimensional Social Transgressions Scale (Florian & Mikulincer, 1997); TMT = Terror Management Theory; N-EPI = Neuroticism subscale of the Eysenck Personality Inventory (EPI; Eysenck & Eysenck, 1967); BES = Body Esteem Scale (Franzoi & Shields, 1984); RSES = Rosenberg's Self-Esteem Scale (Rosenberg, 1965); SSGS = State Shame and Guilt Scale (Marschall, Sanftner, & Tangney, 1994); IS = Intimacy Scale (Shrabany, 1994); IS-S = Intimacy Scale—Short version (Shrabany, 1994); FIS = Fear of Intimacy Scale (Descutner & Thelen, 1991); NFIS = Need For Intimacy Scale (Sanderson & Cantor, 1995); MVI = Mate Value Inventory (Kirsner et al., 2003); RCI = Relationship Closeness Inventory (Berscheid, Snyder, & Omoto, 1989); RAS = Relationship Assessment Scale (Hendrick, 1988); IMSS = Ideal Mate Selection Standards (Regan, 1998); RBS = Romantic Belief Scale (Sprecher & Metts, 1989); RAQ = Interpersonal Competence Questionnaire (Buhrmester et al., 1988). RSQB = Rejection Sensitivity Questionnaire (Downey & Feldman, 1996); BEA = Batson Empathy Adjectives Behavior Inventory (Helreich & Stapp, 1974); ICQ = Interpersonal Competence Questionnaire (Snell & Finney, 1993); ASS = Attachment Style Scale (Mikulincer, Florian, & Tolmazz, 1990); TSBI = Texas Social Behavior Inventory (Batson et al., 1991); FS = Forgiveness Scale (Worthington, Hook, Utsey, Williams, & Neil, 2007); J-PANAS = Japanese Positive and Negative Affect Schedule (Sato & Yasuda, 2001); J-AAS = Japanese Adult Attachment Style Scale (Takuma & Toda, 1988); J-RSES = Japanese Rosenberg's Self-Esteem Scale (Yamamoto, Matsui, & Yamanari, 1982); STD = Subjective Temporal Distance; fMRI = Functional Magnetic Resonance Imaging.

whereas moderately avoidant participants rated their date less favorably (*note*. a similar pattern was present among highly avoidant participants although the results did not reach statistical significance). Similarly, Silveira and colleagues (2014) demonstrated how MS elicits increased attraction and striving for the initiation of close relationships at both a behavioral level and a neurocognitive level, while also examining the role of gender. First, a higher proportion of males than females were affected by MS than the no-prime control in reporting a greater desire to meet an attractive partner. This is in accordance with evolutionary theory that proposes an asynchrony of mating strategies in men and women (Buss & Schmidt, 1993). Interestingly, there were no gender difference in the neural response to MS, which indicates a disconnection between neurocognitive processes and the behavioral expression of desire. Both males and females responded to MS with significantly higher activation in brain regions associated with specific mating motivation (i.e., left anterior insula) and broader approach motivation (i.e., adjacent inferior prefrontal cortex; Harmon-Jones, Harmon-Jones, & Price, 2013).

Birnbaum and colleagues (2011) found that sexual attraction—operationalized as the desire to have a casual “one-night stand” encounter with an attractive stranger—tends to increase after MS induction depending on participant gender, the presence of romantic overtones, and attachment. Study 1 revealed that MS only increased motivation to have nonromantic casual sex among the male participants, whereas, in Study 2, where the casual encounter was manipulated to have romantic overtones, MS boosted the desire for casual sex irrespective of gender. Finally, Study 4 found that overall interest in sex, desire for sex with a romantic partner and with a stranger, depended on the specific interpersonal goals that underlined the attachment orientations of participants. Although MS decreased the overall sexual desire held by highly avoidant women, MS increased overall sexual desire irrespective of gender when attachment anxiety was high. Presumably, the exacerbated separation anxiety triggered by MS among the highly anxious (e.g., Mikulincer, Florian, Birnbaum, & Malishkevich, 2002) increased their need for intimacy achieved through sexual congress (e.g., Davis, Shaver, & Vernon, 2004). In addition, MS increased the desire for casual sex with a stranger among males high in avoidance—perhaps a product of their tendency for emotional distancing (Mikulincer & Shaver, 2007)—and decreased overall sexual desire among males low in avoidance. Females were not interested in having casual sex with a stranger regardless of their avoidant orientation. Secondary analyses revealed that the increased craving for sex among those high in attachment anxiety following MS was motivated by a hedonistic “seize the day” approach to dealing with death awareness. Furthermore, increased sexual desire among people high in anxiety and low in avoidance was motivated by fears of abandonment and thus a striving for intimacy. Another motive at the root of some of the findings was the sense that one’s self-esteem could be bolstered

because of casual sexual engagement. Highly avoidant males exposed to MS reported casual sex as being an outlet for self-esteem enhancement and as a means of coping with unsavory feelings, more broadly. In summary, casual sex as a potential means of relationship initiation serves a role in buffering mortality concerns. People desire casual sex for many reasons beyond simple pleasure, such as to satisfy a desire not only for intimacy and attachment needs but also for the acquisition of self-esteem, particularly among highly avoidant males.

However, sometimes, MS does not amplify attraction. It can instead lead to a denial of sexual attraction and even the derogation and avoidance of attractive potential mates when they are perceived as reminders of human corporeality and thus death. That is, when attractive others trigger our basic animalistic bodily urges of lust and so on, we are transported from our symbolic perch of immortality as special and enduring entities to vulnerable and finite pieces of biological protoplasm (Rank, 1930/1998). Research has demonstrated that under regular conditions, when heterosexual males and females are asked to rate the attractiveness of sexually alluring females, as expected, males tend to report the highest level of attraction. However, MS causes males to report sexually alluring females as less attractive (Landau et al., 2006, Studies 1 and 4) and to downregulate their sexual intent (Landau et al., 2006, Study 2). This phenomenon is specific to when targets of attraction such as attractive females are portrayed as sexually seductive; males report increased attraction when target females appear more “wholesome” (Landau et al., 2006, Study 3). When targets of attraction do not present as wholesome, another strategy for people to deny their mortality is to literally objectify them (i.e., imbue them with the symbolic essence of an immortal object to neutralize their association with mortality).

To examine the anxiety-assuaging function of literal objectification, Morris and Goldenberg (2015) presented heterosexual males and females with a pair of images of sexually alluring women who were either presented standing alongside an object (a beer bottle or calendar frame) as separate entities or merged together as one in the form of a single entity (i.e., literally objectified). It was predicted that the literally objectified women would take onboard the immortal properties of the objects they were merged with and would no longer be perceived as a threat and would be viewed as more attractive. Consistent with that proposition, males identified the literally objectified sexually alluring women as more attractive following MS. On the contrary, the nonobjectified women were found to be less appealing by the male participants compared with the female participants following MS—such is the extent to which the sexualized human body can be existentially threatening. These findings support the anxiety-assuaging role of literal objectification as a tool that facilitates sexual attraction by reducing the existential threat inherent in human bodies (in the present case, the female body) by symbolically transforming its natural (mortal) form

into a cultural object that is eternal (Goldenberg & Roberts, 2004, 2010).

Mate standards/contingencies for attraction. Seven studies from five articles (Coolsen & Nelson, 2002; Cox et al., 2008; Frischlich, Rieger, Dratsch, & Bente, 2015; Hirschberger, Florian, & Mikulincer, 2002; Kosloff, Greenberg, Sullivan, & Weise, 2010) have demonstrated how important attributes associated with self-esteem, worldview, and attachment are in facilitating attraction under conditions of MS. However, as mate standards that are too exacting can inhibit the attainment of close relationships, people tend to relax their mate standards, especially following MS.

Kosloff et al. (2010) highlighted how important worldview and self-esteem motives are in shaping dating preferences across dating time frames (e.g., short term vs. long term) following MS. When people desire short-term encounters, MS motivates the pursuit of a partner who possesses trophy features that bolster self-esteem; however, when people seek more long-term relationships, MS inspires a preference for partners who reinforce their worldviews. Specifically, Study 1 revealed that after MS, a short-term dating focus led participants to seek a highly attractive (i.e., self-esteem bolstering) yet worldview dissimilar partner, whereas a long-term dating focus increased interest in an average looking yet worldview similar (i.e., worldview validating) partner. Study 2 specifically targeted short-term dating scenarios and found that after MS, participants were more interested in dating someone who was prudish yet self-esteem enhancing, whereas a sexually available yet self-esteem threatening candidate was less favored, however, only among male participants. Study 3 replicated the prior findings by showing that a short-term dating focus interacted with MS to heighten the accessibility of self-esteem-relevant concepts and increase preference for self-esteem relevant features in potential partners (e.g., “They will make me feel good about myself”). In contrast, MS led participants in the long-term dating condition to complete more worldview-relevant words than those in the short-term condition and controls and to prefer more worldview-relevant features in a future partner (e.g., “They will have the same beliefs as me”).

Frischlich et al. (2015) sought to tease apart which of two worldview characteristics (i.e., similarity vs. group membership) are most important when selecting a long-term partner after MS. A sample consisting entirely of German females interested in long-term dating were asked to respond to a series of potential partners on a bogus match-making website after the death prime. Potential partners were either in-group (i.e., German) or out-group (i.e., Arab) members and matched with the participant as possessing similar or dissimilar attitudes and interests. The lowest interest after MS was for a dissimilar in-group candidate, and both dissimilar and similar out-group candidates raised equally low interest. These findings supported the intuitive notion that a partner who

validates both aspects of a person’s worldview should be most appealing. Interestingly, the female participants preferred the similar out-group candidate to the dissimilar in-group candidate. This suggests that similarity trumps group membership. Moreover, dissimilar in-group candidates were evaluated even more negatively than dissimilar out-group members. This suggests the presence of the so-called “black sheep effect” (Marques & Yzerbyt, 1988) whereby dissimilar in-group members are heavily ostracized as a way of preserving the perceived positivity (i.e., the anxiety-buffering value) of an in-group as a whole.

The potential for a partner to satisfy one’s attachment needs is also an important precursor to attraction after MS. One way for people to feel reassured that their needs will be met is by seeking romantic partners who share similar positive characteristics to early attachment figures (e.g., parents). Cox and colleagues (2008, Study 5) observed that MS increased attraction toward fictitious opposite-sex partners who held similar desired characteristics to the participants’ opposite-sex parents. In addition, participants desired to sit closer to a candidate who was highly similar to their opposite-sex parent after MS. These findings support the proposition outlined by attachment theory (e.g., Bowlby, 1982; Brumbaugh & Fraley, 2006; Hazan & Shaver, 1987) that attraction to those who are similar to parental attachment figures is driven by the perception and hope of them serving as surrogate safe havens and sources of security.

Similarly, attraction and romantic desire hinges on potential mates satisfying peoples’ dominant interpersonal orientations, which are manifestations of internalized cultural worldviews that require strengthening following MS. In general terms, certain people appear more predisposed to internalize collectivistic worldviews that foster a greater desire for closeness and interdependence (i.e., communion), whereas others idealize relational distance and independence because of their more individualistic worldviews (i.e., agency; Block, 1973). By considering this agency-communion dichotomy, it is possible to further establish when close relationships will be initiated, versus when they will not be initiated. Coolsen and Nelson (2002) found evidence to suggest that close relationships are not a suitable buffer for highly agentic individuals. Their devaluation of close relationships in favor of cultural worldview defense follows their dominant pattern of interpersonal functioning. Not only do highly agentic individuals report being less interested in romantic relationships following MS, they also endorse attachment avoidance in others and disapprove of people who are dispositionally anxious or secure. Although no statistically significant findings supported the prediction that more communal (i.e., interdependent) people would respond to MS in the opposite way by reporting increased desire for romance and greater endorsement for attachment security, the prediction is nonetheless theoretically sound. Overall, the researchers’ demonstrated yet another influential moderator that operates in parallel with the attachment system in

predicting the type of people who should seek out close relationships, versus other routes of terror management.

Based on the above-mentioned studies, people ought to uphold relatively strict mate standards because effective relationship-based terror management can only occur when certain personal and context-specific needs are satisfied. However, if one rigidly adheres to strict mate standards, it is apparent that one may find oneself with a lack of loved ones to turn to for support. Accordingly, people ought to relax their mate standards at times so that they do not miss potential opportunities. Hirschberger, Florian, and Mikulincer (2002) found that people are more willing to compromise their ideal mate standards and characteristics for a long-term romantic partner following MS, although that depends on their level of dispositional self-esteem. Under control conditions, people with high self-esteem displayed the least willingness to diverge from their ideals (e.g., high interpersonal skills, intellect, social status, and physical attractiveness), whereas following MS, people with high self-esteem projected a relatively high readiness to compromise their standards, just as those with low self-esteem did. It appears then that MS can inspire efforts to initiate close relationships for anxiety relief even at the expense of self-esteem and probably also at the expense of the worldview buffer as settling for a less-than-ideal mate can violate worldview expectations. Although participants both low and high in self-esteem compromised their standards following MS, those high in self-esteem made behavior-specific attributions for this compromise suggesting guilt (e.g., “if only I hadn’t”), whereas those low in self-esteem made internal attributions suggesting shame (e.g., “if only I weren’t”; Tangney, 1995). In any case, the primary findings provide partial support that close relationships serve a buffering role independent of worldview and self-esteem.

Romantic beliefs and ideology. Eight studies from two articles (Arndt, Greenberg, & Cook, 2002; Smith & Massey, 2013) found that MS increased pro-romance beliefs as measured by both explicit and implicit measures. However, these associations were moderated by attachment and gender in some of the studies.

Smith and Massey (2013, Study 1) found that MS led to increased support of romantic ideology (e.g., love at first sight); however, this effect was unexpectedly found only among the avoidant and insecurely attached participants (merged into one “insecure” category). Their second study used an almost identical methodology, except, due to the low reports of anxious attachment, only avoidant insecurity was compared with secure attachment. In direct contradiction to their initial study, Study 2 revealed that MS led to greater support of romantic ideology only among the securely attached. However, the securely attached concomitantly displayed less relationship preoccupation after MS, whereas preoccupation surprisingly rose among the avoidantly attached.

Smith and Massey’s (2013) studies yielded disparate and theoretically incongruous results. However, some important methodological limitations merit brief comment. First, measuring attachment after MS is problematic given that MS can influence self-reported attachment. In fact, Coolsen and Nelson (2002; within present review) found that MS affected peoples’ ratings of ideal attachment style, incidentally, using the same measure of attachment. Second, Hazan and Shaver’s (1987) categorical attachment measure is not the currently recommended measure of attachment (Fraley & Waller, 1998; Mikulincer & Shaver, 2007). Third, combining anxious and avoidant attachment into one overarching insecure category (as seen in Study 1) and comparing the aggregate against security limit the interpretability of the findings because anxious and avoidant persons fundamentally differ in their attachment motivations. For example, avoidant people tend to inhibit the experience and expression of romantic love (Doherty, Hatfield, Thompson, & Choo, 1994), whereas anxious peoples’ desire for closeness and concern about rejection and abandonment lead to more intense, possessive, and dependent expressions of love (Feeney & Noller, 1990). In Study 2, only avoidance and security were examined as potential moderators. Thus, the discrepant moderator variables across studies may well explain the inconsistent pattern of results. Finally, as the researchers stated, there is a possibility that endorsement of romantic ideology in response to MS could simply be a form of cultural worldview defense. After all, love in all its forms (e.g., passionate, unconditional, sexual, etc.) are culturally bound constructions (e.g., Hiew, Halford, van de Vijver, & Liu, 2015), the bolstering of which reaffirms one’s worldview and reduces death-related anxiety. The worldview defense hypothesis integrates neatly with the results of Study 1 whereby the insecure anxious and avoidant individuals reported greater ideological support for romance than the secure individuals as insecurity is more highly associated with worldview defense (e.g., Caspi-Berkowitz, 2003; Mikulincer & Florian, 2000; Weise et al., 2008).

Six studies by Arndt et al. (2002) examined the effect of MS on the activation of worldview-relevant constructs (romantic accessibility vs. nationalistic accessibility) and the moderating role of gender. Results revealed that females responded to MS with higher levels of latent romantic relationship accessibility, whereas males held more nationalistic views (i.e., patriotism). Although there is a dense literature base supporting the notion that females may be more predisposed toward romantic concepts, from both social-psychological (e.g., Cross & Madson, 1997; Rosenberg, 1981) and evolutionary perspectives (e.g., Buss & Schmidt, 1993; Trivers, 1972), it is not an immutable predisposition. Indeed, Arndt and colleagues (2002) found that by priming female participants to consider nationalistic concepts, their tendency to experience higher levels of romantic-thought accessibility were attenuated such that they held more patriotic views following MS. Although females may ordinarily be more predisposed toward relationship-related constructs and males

more so toward nationalistic constructs, the strength of these preoccupations can be altered by the presence of more salient worldview-related stimuli.

Summary. All studies demonstrated simple main effects in favor of the prediction that MS increases peoples' engagement in a variety of facilitative processes that lead to the initiation of close relationships. However, the examined main effects were in many cases moderated by a variety of dispositional and situational factors such as attachment, gender, relationship context (e.g., romantic vs. nonromantic), relationship time frame (e.g., short term vs. long term), and self-esteem enhancement and worldview validation motives. Accordingly, MS does not always lead to increased relationship initiation, and people with certain characteristic traits and who are under certain conditions are either capable or incapable of seeking relational security. Although the aggregate of findings reveals the presence of numerous moderators, two main patterns emerged: (a) people with greater attachment security (and even an anxious attachment style) are more likely to initiate close relationships following MS, whereas avoidant-insecure individuals find such pursuits less desirable, and (b) gender differences are present, with males generally inhibiting romantic pursuits and activating interest in casual sex and overall attraction following MS and females focusing more on the romantic aspects of relationship initiation and avoidance of purely physical and sex-based initiation attempts. Accordingly, the way people respond to MS clearly differs based on enduring patterns of interpersonal functioning and other characteristics. We elaborate on these levels of moderators that activate and inhibit relationship initiation further in the "Discussion" section.

Relationship Maintenance Processes

Overview of studies. In total, 33 experimental studies from 15 articles, and three unpublished studies from one dissertation, tested two primary hypotheses: (a) that MS should increase peoples' efforts to maintain and enhance relationships and (b) that well-maintained close relationships should afford people the necessary psychological security to effectively buffer death-related anxiety. Relationship maintenance factors that were examined across studies included relationship satisfaction, perceived regard, commitment, relationship-contingent self-esteem (RCSE), positive representations of partners, intimacy striving with romantic and parental attachment figures, romantic sex, and forgiveness. See Table 1 for a comprehensive summary of studies.

Relationship satisfaction. Two studies from two separate articles (Anglin, 2014; Miller, 2003) examined the effect of MS on peoples' expectations for future relationship satisfaction and found conflicting and unexpected results. Insecure attachment moderated the positive association between MS and satisfaction found in one of the studies.

Anglin (2014) observed that after MS, participants who had reported a currently troubled family relationship found themselves and their fellow family member both reporting that they would put more effort into repairing their troubled relationship and that they predicted greater relationship satisfaction to come. This effect, however, was only observed among participants high in both attachment avoidance and anxiety (but not among securely attached individuals who may have a greater focus on romantic relationships altogether for terror management purposes; for example, Cox & Arndt, 2012, Study 2) and remained after relationship importance was controlled for. The fact that participants high in avoidance and anxiety responded to MS by expecting more satisfying future relationships with their family members may seem inconsistent, particularly given avoidant individuals' tendency to detach from attachment figures. However, avoidant individuals have been known to report a greater desire for intimacy after MS (e.g., Hart et al., 2005) and avoidant tendencies may lead to a form of intimacy striving done to maintain a positive self-perception or sense of self-worth (Bartholomew & Horowitz, 1991). Moreover, because the participants who showed this effect were not only highly avoidant, but also highly anxious, their anxious tendency to intensely strive for intimacy may have countered their avoidant tendencies (Feeney & Noller, 1990). This research adds to the literature on the terror management function of close relationships and offers novel insight into understanding the fearful-avoidant attachment style, which, as reported, can paradoxically lead to increased relationship-maintaining behaviors following existential threat.

A second reviewed study by Miller (2003, Study 1) also longitudinally examined the effect of MS on relationship satisfaction scores from before and after the manipulation. Contrary to predictions, MS did not increase relationship satisfaction scores from baseline (i.e., participants remained just as satisfied with their relationships after MS as they were prior to the manipulation). However, because the same study also focused on investigating responses to a worldview-threatening hypothetical relationship problem (e.g., partner's dismissal of one's valued hobbies), participants were asked to imagine their partner's transgression between the initial rating of relationship satisfaction and MS but before the final rating of satisfaction. Therein lies one possible explanation, based on TMT, as to why this study failed to demonstrate an increase in relationship satisfaction after MS. Rather than displaying the expected increase in a relationship-maintaining process, they potentially buffered their death awareness by defending their worldviews at the expense of their relationship. Incidentally, the same study by Miller (2003) also found that people responded to MS, relative to the controls, by reporting more anger and hostility toward their partner after being reminded of the hypothetical relationship problem (see the "Conflict" section, for a full report).

Perceived regard. Perceived regard (i.e., perceived self-value or esteem assigned by others) plays into terror management mechanics by facilitating an increased sense of self-worth and placing one more firmly within the security of one's cultural beliefs (e.g., Baldwin & Holmes, 1987; Crocker & Wolfe, 2001; Leary & Baumeister, 2000; Solomon, Greenberg, & Pyszczynski, 1991). Perceived regard also contributes to experiential security in close relationships as people need to believe that their partners see qualities in them worth valuing (e.g., Murray, Holmes, & Collins, 2006). Five studies from one article (Cox & Arndt, 2012) reported main effects of MS increasing peoples' ratings of perceived regard within romantic relationships. However, this effect was moderated in some of the studies by RCSE, attachment, and the source of perceived regard (e.g., romantic partner vs. stranger). In addition, perceived regard—as framed either positively or negatively—differentially predicted DTA following MS induction, such that positive regard buffered MS-induced DTA, whereas negative regard left one exposed to heightened DTA.

Specifically, Study 1 found that following MS, participants were more likely to exaggerate perceived regard from their romantic partner rather than exaggerate their own self-worth. This tendency to rely on bolstered perceptions of regard from romantic partners was more likely when people were high in RCSE (Cox & Arndt, 2012, Study 5). That is, when they placed a greater importance on obtaining self-esteem from loved ones. Study 2 revealed that the anxiety-buffering effect of perceived regard was specific to when regard was perceived to come from a romantic partner rather than a stranger. As for the moderating role of attachment, exaggerated perceived regard from romantic partners following MS was common among securely attached individuals, whereas preoccupied insecure participants were more inclined to exaggerate perceived regard from parents (Cox & Arndt, 2012, Study 7). Finally, Study 4 observed that participants who visualized perceived negative regard from their romantic partner displayed increased DTA following MS (compared with the control), though after visualizing positive regard, participants were protected from MS-induced increases in DTA. This final finding directly supports the proposed anxiety-buffering role that positively perceived regard plays within close relationships.

Commitment. As one of the major components of close relationships, commitment is defined as the desire to maintain a relationship overtime (e.g., Johnson, Caughlin, & Huston, 1999). Commitment is associated with a variety of positive psychological outcomes including the facilitation of constructive strategies during interpersonal conflict (e.g., Arriaga & Rusbult, 1998) and relationship satisfaction (e.g., Rusbult & Buunk, 1993). Four studies from three articles (Cox & Arndt, 2012; Florian et al., 2002; Strachman & Schimel, 2006) found that MS increased relationship commitment. However, this effect only emerged to the extent

that one's partner held a similar worldview, in one of the studies, and two other studies found that perceived regard explained (or mediated) the association. Taken together, worldview and self-esteem motives appear to be highly implicated when people bolster their relationship commitment in response to MS. Finally, a fifth commitment-related study demonstrated that the typical MS-induced increase in worldview defense can be attenuated by increased relationship commitment (Florian et al., 2002, Study 2).

Florian and colleagues (2002, Study 1) found that MS engendered greater romantic relationship commitment than did the control conditions, irrespective of gender or trait neuroticism. Cox and Arndt (2012, Study 3) replicated these findings, while also finding that perceived regard mediated the association between MS and increased commitment, such that participants were more likely to increase commitment after MS to the extent that they view their partner as having a positive impression of them, as it validates their self-esteem. The mediating effect of high perceived regard was also dependent on the participants' romantic partners (but not their parents) serving as sources of perceived regard and on the participants having high RCSE (Cox & Arndt, 2012, Study 6). Taken together, their moderated-mediation analysis revealed that individuals who relied on their partners more for self-affirmation expressed greater commitment to their romantic partners to the extent that their partners served as a source of self-esteem following MS.

Romantic commitment is also dependent on the degree of similarity between partners. Strachman and Schimel (2006) found that by having participants think about worldview differences between themselves and their romantic partners, they displayed a decline in relationship commitment after MS, relative to the control. Surprisingly, when participants were made to think about similarities between themselves and their partners, there was no significant effect of condition, as commitment should increase following MS and reminders of worldview similarities. Controlling for dispositional self-esteem and attachment did not alter the results. In interpreting these findings, first, the reported decrease in commitment after MS and reminders of worldview differences provides direct support for the notion that one of the reasons why close relationships provide a buffer is that they help people reinforce their immortality-affording worldviews. Therefore, when relationships no longer provide a solid platform for worldview reinforcement, their appeal diminishes and commitment subsequently drops. This makes theoretical sense; however, the failure of the study to detect the opposite effect (i.e., a significant increase in commitment following MS and reminders of worldview similarities) is puzzling. Although this may simply be evidence of the failure of close relationships to buffer mortality concerns, the authors suggest a cogent alternative explanation. That is, most of the participants would probably have been in relationships with people who were indeed similar to themselves on worldview-relevant characteristics or were generally

more focused and aware of similarities (vs. differences) between themselves and their romantic partners. If preexisting levels of similarity were high, then it makes sense that the similarity prime was less potent than the differences prime. In support of this perspective, the pattern of means for the similarity prime condition was nearly identical to the pattern of means for the “no-prime” condition.

Finally, Florian and colleagues (2002, Study 2) found that the induction of high romantic commitment, compared with low commitment, prevented the usual disparagement of moral transgressors in response of MS, irrespective of gender and neuroticism. Accordingly, commitment to romantic partners, as an adaptive response to death reminders, effectively reduced peoples’ tendency to engage in potentially harmful worldview defense and further strengthens the utility of the relational security buffer.

Intimacy striving for self-esteem. As reported above, RCSE can contribute to greater relationship commitment and perceived regard. Further evidence for the role of RCSE in moderating the association between MS and relational striving comes in the form of three unpublished dissertation studies by Bellavia (2002, Studies 1, 2, and 3).

Study 1 revealed that participants who obtained more self-esteem from their romantic partners reported fewer doubts about their partners’ qualities and about their partners being the “right” ones for them (i.e., partner validation) and were less likely to report that their partners wanted them to change aspects of themselves (i.e., self-validation) after MS, relative to the control. Furthermore, participants who normally derived their self-esteem from their partners did so to a greater extent following reminders of mortality, compared with the control. Study 2 attempted to replicate these findings but failed to achieve that end. Nevertheless, some interesting new findings were found regarding the effect of MS, RCSE, and symbolic partner availability (vs. unavailability) on DTA. When romantic partners were symbolically available (i.e., when participants were in the presence of a cherished photograph of their partner vs. a photograph of a tree), persons low in RCSE (compared with high in RCSE) experienced heightened DTA in the MS condition, relative to the control; in contrast, MS had no effect on DTA when partners were unavailable regardless of RCSE. These findings suggest that some of the anxiety-buffering effect of romantic partners is specifically attributed to their being a source of self-esteem enhancement, so when people are not predisposed to derive self-worth from partners (i.e., low RCSE), the relationship does not necessarily reduce death-related thoughts. Finally, Study 3 found that participants managed MS effects by engaging in worldview defense regardless of the importance of their romantic relationships for their sense of self-worth, and even when partners were symbolically available.

In summary, the bulk of the support that romantic partners serve an anxiety-buffering function came from the first study

that showed that MS led those with high RCSE to perceive their partners in ways that enhanced their self-esteem and validated their worldviews. The second and third studies were less consistent, even providing some evidence that loved ones do not always buffer mortality concerns.

Positive representations of partners. As MS motivates relational strivings, it should also affect the perception of past experiences with a bias toward the recollection of positive interpersonal experiences and a reduced subjective temporal distance (STD; that is, the subjective gap between a past event and the present) of positive interactions. This is because the more favorable the cognitions about a source of security, the more effective that source becomes as a buffer against existential anxiety. Three studies from two articles (Cox et al., 2008; Wakimoto, 2011) found that people responded to MS by showing more positive memory biases toward themselves, their parents, and their close friends.

Cox and colleagues (2008, Study 4) found that MS made it easier for participants to recall positive interactions with their mothers that had occurred in the past and more difficult to recall past negative interactions. This effect was interpreted as a sign that the participants held more positive representations of their maternal attachment figures. Also investigating biases toward positive representations of close others, Wakimoto (2011, Study 2) found that MS decreased the STD of a close friend’s past positive conduct, irrespective of dispositional attachment and self-esteem. In other words, people responded to MS by perceiving a positive event in the past as being temporally closer to the present. This form of memory-based intimacy striving highlights the close relationship buffer in action. Wakimoto (2011, Study 3) was interested in testing whether or not these biases would also occur during the interpretation of one’s own past conduct. It was revealed that the STD of the participants’ own past positive conduct was smaller, as expected, under conditions of MS than control. Despite it being reasonable to suggest that negative conduct may be pushed further into the past after MS, there was no effect of MS on the STD of one’s own negative conduct toward a friend. Furthermore, as in Study 2 by Wakimoto (2011), attachment and self-esteem were not implicated, even though self-esteem motives could have theoretically been implicated because biases toward past positive behavior conceivably bolster one’s self-esteem. Broadly, biases toward positive representations of both one’s self and close others within the context of interpersonal dealings are clearly beneficial in ameliorating the terror of death. The reconstruction of positive autobiographical memories and a focus on them aid the maintenance of close relationships in facilitating future intimacy.

Intimacy striving (parental attachments). As people mature, their reliance on parental attachment figures for emotional security gradually declines (e.g., Doherty & Feeney, 2004; Trinke & Bartholomew, 1997). Instead, the psychological functions

formerly served by parents are usually provided by romantic partners and/or close friends (e.g., Cassidy & Shaver, 1999; Hazan & Shaver, 1987; Mikulincer & Goodman, 2006). However, depending on one's predisposition, parents may remain as a primary source of anxiety relief well into adulthood. Four studies from one article (Cox et al., 2008) demonstrated that not only can MS increase peoples' desire for parental attachments, particularly among the anxiously attached, but that a sense of security forged through close parental relationships effectively buffers death-related anxiety and reduces worldview defense and bolsters implicit self-esteem.

Cox and colleagues (2008, Study 1) found that participants who had recalled a positive interaction with their mothers (compared with a negative interaction and interactions with acquaintances) responded to MS with less DTA. In other words, the recollections of their maternal attachment figures and the associated sense of security buffered their fears. It was further revealed that when people are primed to imagine positive encounters with their parental figures (or a close friend), they are also less likely to defensively uphold their worldview (Study 2), and the visualization of parental figures (or romantic partners) bolstered implicit self-esteem after MS (Study 3). Accordingly, the anxiety-buffering effect of parental-based relational security appears not to act in a manner entirely separate from worldview and self-esteem. Finally, Study 6 examined the extent to which attachment style predicted preferences for particular types of relationships in response to MS. A preference for parental attachment figures after MS was predominantly found among persons low in avoidance and high in anxiety (i.e., preoccupied insecurity), whereas romantic attachment was sought after primarily among the securely attached.

Romantic sex. According to TMT, sex can be deeply threatening as it makes us acutely aware of our animal nature and physical limitations. Combating the threat of mortality is not easy when such acts bring us closer to the realization that we are bound for death and decay. To sever the threatening link between sex and death, sex is often combined with constructs of romance so that it can be transformed from a mere animal act to a symbolic human experience. Moreover, sex loses its threatening link to mortality as a function of being integrated as a meaningful part of one's worldview. Seven studies from four articles (Birnbaum et al., 2011; Goldenberg, Cox, Pyszczynski, Greenberg, & Solomon, 2002; Goldenberg et al., 2000; Goldenberg, Pyszczynski, McCoy, Greenberg, & Solomon, 1999) reported that, in general, MS causes individuals to distance themselves from strictly physical nonromantic sex and gravitate toward romantic sex instead because of its inoculating effect on DTA. However, these findings varied as a function of how much participants relied on their bodies as a source of self-esteem (i.e., body esteem) and secondary variables of neuroticism and gender.

Two studies by Goldenberg and colleagues (2002) found that participants responded to MS by rating nonromantic sex

as significantly less appealing than the control (*note*. two other studies, Birnbaum et al., 2011, Study 3; Goldenberg et al., 1999, Study 1, also examined that association but observed statistically nonsignificant findings trending in the predicted direction). However, the post-MS decline in appeal of nonromantic sex was only present among participants who had been reminded of their similarity (vs. dissimilarity) with other animals (Goldenberg et al., 2002, Study 1) and among individuals whose sense of self-esteem was not contingent on their physical attributes (Goldenberg et al., 2002, Study 2). Given the threatening nature of strictly physical nonromantic sex and the inoculating effect of romance love, it may come as no surprise that MS was found to increase the desirability of romantic sex with a current (or past) partner within the context of an ongoing relationship (Birnbaum and colleagues, 2011, Study 3).

Adding further support to the notion that the physical/nonromantic aspects of sex are fundamentally negative and that romantic aspects of sex are positive within a TMT context, DTA fluctuates in accordance with the type of sexual activity. For example, Goldenberg and colleagues (1999, Study 2) observed that when participants high on neuroticism focus on the physical aspects of sex, they tend to exhibit heightened DTA, whereas when they focus on the romantic aspects of sex, death-thoughts were less accessible. Furthermore, people high in neuroticism who are threatened by physical sex can report less death anxiety, provided the threatening link between sex and mortality is weakened by a "romantic love" prime (Goldenberg et al., 1999, Study 3). Finally, Goldenberg and colleagues (2002, Study 1) found that having people think about romantic sex (relative to physical sex) buffered an increase in death anxiety brought about from a prior consideration of the similarity between humans and other animals. These findings demonstrate the anxiety-buffering and relationship-maintaining functions of romantic sex.

Intimacy striving (romantic attachments). Given that romantic relationships appear to assuage death concerns, individuals should be motivated to maintain a sense of intimacy with their romantic partners when reminded of their mortality. Four studies from four separate articles (Hirschberger, Florian, & Mikulincer, 2003; Hoppe, Fritsche, & Koranyi, in press; Mikulincer & Florian, 2000; Yaakobi, Mikulincer, & Shaver, 2014) found that MS increased intimacy striving within established romantic relationships. However, this relationship appears to be dependent on a person's attachment and situational factors such as parental status (i.e., with offspring vs. without offspring) and partner feedback (e.g., positive vs. negative).

Mikulincer and Florian (2000, Study 5) observed that MS (relative to the control) led to a greater desire for romantic intimacy. However, this was only true among securely attached people, whereas those high in avoidance and anxiety displayed intimacy needs unaffected by MS. Yaakobi and

colleagues (2014, Study 4) also found that a more secure attachment (i.e., being low in avoidance) increased the likelihood of increased intimacy striving after MS among a cohort of childless married couples. However, following the activation of parenthood-related thoughts (i.e., manifest thoughts and emotions derived from the imagined birth of one's child), the same more securely attached married couples low in avoidance reacted to MS (relative to the control) with reduced intimacy striving. These findings seem to indicate that relationship partners can be devalued, to some extent, in favor of offspring that provide a more potent and thus more desirable form of death denial. Not only can the child be the target of relational strivings but also the vessel through which parents attain a greater sense of symbolic immortality.

Two recent studies by Hoppe et al. (in press) further established that offspring reduce the buffering appeal and potency of intimate romantic relationships. In their first study, idealistic thoughts of future romance with current partners without (vs. with) children following MS, relative to the control, led to more implicit positive impressions of their partners (i.e., a marker of intimacy striving, desire, satisfaction, etc.). Furthermore, their third study revealed that thoughts of positive intimate future relationships without children (vs. with children) reduced implicit DTA, especially among individuals low in attachment avoidance. Overall, these findings suggest that romantic relationships help reduce existential anxiety due to truly relational aspects (e.g., love), rather than the potential for reproduction benefits. Indeed, the fact that low avoidant attachment moderated the buffering potency of nonparental relationships corroborates that perspective, because love is generally more desired and accessible by individuals with less avoidant predispositions.

Another interesting finding was observed by Hirschberger and colleagues (2003) who examined how hypothetical partner feedback (praise, complaint, and criticism) may moderate the association between MS and intimacy striving. Under control conditions, participants reported the highest degree of intimacy striving after receiving positive feedback, followed by complaints, and were least likely to strive for intimacy after being the target of criticism. However, MS boosted strivings for intimacy under all three feedback conditions. That is, reminders of mortality led participants to tolerate blows to their self-esteem in the form of partner criticism and complaint to maintain relationship intimacy. These findings provide further support for the buffering role of close relationships that are valued even when they threaten self-esteem and worldviews (Hirschberger, Florian, & Mikulincer, 2002).

Forgiveness. Transgressions are not uncommon within close relationships and as such, each partner's capacity to forgive is vitally important if they would like to maintain their buffering relationships. Two studies by Van Tongeren, Green, Davis, Worthington, and Reid (2013) found that MS increases

forgiveness; however, this effect was moderated by relationship commitment and mediated by empathy.

Within Study 1, MS (relative to the control) interacted with high relationship commitment to result in greater forgiveness of someone who had committed a hurtful offense in the past month. In contrast, when participants were less committed to their offenders, they displayed significantly less forgiveness after MS. Rather than allowing participants to recall an offender of their choosing (and thus the level of commitment), Study 2 randomly assigned participants to either recall an offense committed against them by someone to whom they were highly committed versus less committed. After MS, participants were less likely to forgive offenders when relationship commitment was low but not high, just as in Study 1. However, unlike the results of Study 1, empathy significantly mediated the effect of MS and relationship commitment on forgiveness. MS was found to reduce the degree of empathy participants displayed toward offenders who they were not overly committed to, thereby leading to a reduction in forgiveness. In summary, this research highlights that people strive to maintain a secure connection with someone who they are highly committed to, presumably because the sense of security afforded within such a relationship is a more desirable and potent buffer.

Summary. In terms of simple main effects, all studies indicated that people respond to MS by holding onto and maintaining preexisting close relationships. However, many of these effects were moderated by variables such as attachment, neuroticism, intimacy, commitment, various experimental manipulations (e.g., worldview similarity vs. dissimilarity), and the need to have self-esteem enhanced and worldviews strengthened. In particular, two main patterns of convergent evidence emerged: (a) secure attachment facilitates relationship maintenance following MS, whereas insecurity (in particular, avoidant insecurity) inhibits maintenance attempts, and (b) individuals with a dispositional need to garner self-worth from partners (e.g., high RCSE) are more likely than those with low RCSE requirements to maintain close relationships following MS. Once more, the large body of evidence pertaining to relationship maintenance processes suggests that peoples' engagement in such processes following MS is heavily moderated by certain dispositional and situational factors. We further elaborate on these two primary contributors of relationship maintenance activation and inhibition further in the "Discussion" section.

Potentially Deleterious Relationship Processes

Overview of studies. Twelve studies from six independent articles examined the effect of MS on a variety of potentially harmful relationship processes such as anger, jealousy, rejection sensitivity, desire for multiple sexual partners, fear of rejection, and relationship breakup. Although intuitively, it may be hypothesized that (a) such processes/outcomes should

increase DTA and (b) that engagement in them should decrease following MS, the opposite could also be true. This is because although seemingly deleterious on the surface, some of these outcomes may, in fact, promote relational maintenance and, therefore, might be strengthened following MS and might reduce DTA. Moreover, some of the outcomes within this section might also serve to bolster self-esteem and reinforce worldviews and, as such, would also be psychologically beneficial from the terror management perspective. This caveat to processes that at first glance may be considered unhelpful is crucial to our interpretation of the findings and is further established within the "Discussion" section. See Table 1 for a comprehensive summary of studies.

Conflict. Anger and relationship conflict can disrupt healthy relationship functioning and leave people exposed to the very anxiety that their relationships serve to mitigate in the first place. According to Florian and colleagues's (2002) third study conducted on a sample of young romantically partnered individuals, thoughts of relationship problems (compared with a neutral topic) evinced heightened DTA. However, despite the potential for anxiety that is associated with conflict, Miller (2003, Study 1) noticed in their longitudinal study on a mixed sample of students and senior citizens that MS actually increased the degree of anger participants held toward their hypothetically worldview-dismissive partner (i.e., a partner critical of one's cherished hobbies). It should be noted that both studies varied significantly in terms of study design (i.e., one manipulated MS and one measured DTA), and more importantly, there were several possible limitations to Miller's work (e.g., lack of sample homogeneity and possible carryover effects from a within-subjects design). Finally, Bellavia (2002, Study 3) examined the effect that MS, symbolic partner availability (vs. unavailability), and the timing of research participation (i.e., just prior to the 9/11 terrorist attacks in New York vs. immediately after) would have on peoples' interpretations of how positive their partners' intentions were after their partners committed a hypothetical transgression (e.g., an inappropriate and costly lie). Interestingly, participants who had completed the study prior to September 11, 2001, interpreted their partners' intentions with respect to their transgression as more positive after MS when their partners were symbolically available (i.e., when a photo of their partner was present), as opposed to unavailable. However, after the terrorist attacks, it appears as though MS effects were compounded by the fearful atmosphere in America at the time, which resulted in participants reporting their partners' intentions no more positively when their partner was available than when they were unavailable. That is, it seems as though close relationships were not potent enough to buffer the intense death-related anxiety that the participants experienced.

Jealousy. Sexual and emotional infidelity can also potentially threaten the stability of romantic relationships by way

of precipitating jealousy-based conflict. Past research and theorizing from both evolutionary (e.g., Buss, Larsen, Westen, & Semmelroth, 1992) and sociocultural (e.g., Eagly & Wood, 1999) perspectives have demonstrated that the perceived seriousness of both sexual and emotional infidelity is highly dependent on a person's gender, with males typically feeling more threatened by a partner's sexual infidelity and females feeling more threatened by a partner's emotional infidelity. Two studies by Goldenberg and colleagues (2003, Studies 2 and 3) extended the literature through their finding that MS reinforces the well-established gender-typical responses to sexual and emotional infidelity. However, at least among males, an increased fear of their partner being sexually unfaithful (relative to emotionally unfaithful) following MS was only the case when their self-esteem was highly contingent on sexual compatibility, performance, and ability. When the males were low on sex-contingent self-esteem, they were less likely to perceive sexual infidelity as more threatening than emotional infidelity. These findings suggest that gender differences in jealousy are due, in part, to sexual and emotional infidelity differentially threatening peoples' self-esteem as a function of gender-typed cultural contingencies of self-worth.

Rejection sensitivity. Rejection sensitivity can harm the integrity of close relationships because it leads people to anxiously expect, readily perceive, and overreact to rejection. For example, rejection sensitivity can cause people to respond defensively in response to perceived rejection and to overestimate their partner's dissatisfaction (e.g., Downey & Feldman, 1996; Downey, Lebolt, Rincon, & Freitas, 1998). One study by Taubman-Ben-Ari et al. (2002, Study 3) found that people generally reported reduced rejection sensitivity after MS; however, this effect was moderated by attachment.

Although MS (relative to the control) understandably reduced self-perceptions of rejection sensitivity because it is a barrier to relational security, this response was unsurprisingly contingent on the attachment style of partners. Precisely, low attachment anxiety (i.e., greater security) was associated with lower reports of rejection sensitivity, whereas high anxiety was not. This effect appeared to be unique to attachment, in that neither gender, nor social or self-esteem, altered this connection. Relational striving can clearly serve an important function in mitigating mortality concerns; however, not everyone is predisposed to seek comfort and closeness in others after MS. As demonstrated by Taubman-Ben-Ari and colleagues (2002), people who are low in attachment anxiety respond to MS with a weakening of cognitive factors that inhibit close relationships, whereas those high in anxiety do not. That is, low attachment anxiety tends to increase intimacy striving, whereas high attachment anxiety tends to inhibit relational striving as a function of heightened rejection sensitivity, after MS.

Risky sexual activity. Risky sexual behavior and associated attitudes can potentially harm one's well-being and the integrity of one's current and/or future close relationships. For example, a strong desire to have sexual relations with multiple partners has vastly different implications when one is single versus in a committed romantic relationship. Five studies from two articles (Lam, Morrison, & Smeesters, 2009; Taubman-Ben-Ari, 2004) found that even though thoughts of risky sex heightened DTA (Taubman-Ben-Ari, 2004, Study 2), people responded to MS with greater support for risky sexual activity among samples of college students (*note.* unfortunately, neither study reported the proportion of participants who were in romantic relationships). This effect was moderated in some studies by gender and fear of intimacy, and mediated by intimacy needs.

Across the four MS studies that reported that MS increased peoples' interest in risky sexual activity (Lam et al., 2009, Studies 1, 2, and 3; Taubman-Ben-Ari, 2004, Study 1), the effect was consistently limited to male participants (Lam et al., 2009, Studies 1, 2, and 3). This gender-specific response is unsurprising because males are typically socialized to be more risk oriented than females (Hirschberger, Florian, Mikulincer, Goldenberg, & Pyszczynski, 2002). Accordingly, it is possible that males were responding to MS with efforts to bolster their self-esteem by adhering to risk-taking socialization pressures. Unfortunately, as the role of self-esteem was not examined, more definitive conclusions cannot be made; however, one factor that was shown to contribute to the observed gender differences was the mediating role of romantic intimacy needs. Males reported lower intimacy requirements than did females and, as a result, sought more sexual partners following MS (Lam et al., 2009, Study 2).

Incidentally, males did not show a greater willingness to engage in risky sex than females across all studies. Taubman-Ben-Ari (2004, Study 1) observed that both genders responded to MS by endorsing a similar willingness to engage in risky sexual behavior, although this effect was qualified by a significant interaction with fear of intimacy such that the increase in endorsement of risky sex after MS was only observed among individuals with less fear of intimacy (*note.* self-esteem was measured but did not significantly influence the pattern of findings). These results are compelling because they are far removed from what might be expected under normal conditions. The illusion of intimacy obtained through sex (risky or otherwise) is useful enough under conditions of MS to be a valid means of terror management, even among people who are ordinarily risk averse.

Fear of intimacy. Prior research has established that MS tends to increase peoples' desire for intimacy (e.g., Mikulincer & Florian, 2000) and commitment to romantic relationships (e.g., Florian et al., 2002) because the sense of security derived from close relationships effectively buffers death

awareness. Accordingly, if the human capacity to be intimate and thus attain or maintain close relationship bonds is a beneficial psychological mechanism, then the temporary removal of that desire by way of "fear of intimacy" priming should leave people vulnerable. Indeed, Taubman-Ben-Ari (2004, Study 3) observed that participants who were primed with fearful of intimacy evinced higher levels of DTA than those in the control group. Gender did not interact with the fear of intimacy condition, and therefore, both males and females benefit from intimacy and are equally crippled by the elimination of it from their anxiety-buffering repertoire.

Separation. Not only is temporary and indefinite separation from a close relationship partner one of the most basic sources of distress for humans (Bowlby, 1973), separation has the potential to increase implicit levels of vulnerability to existential mortality concerns that are normally buffered by close relationships. Three studies by Mikulincer et al. (2002, Studies 1, 2, and 3) found that DTA rose when people imagined separating from their close relationship partners. However, this effect was dependent on attachment, length of separation, and whether the target one had imagined separating from was a close partner or a mere acquaintance.

Study 1 revealed that participants who had imagined separating from a close relationship partner, either directly or indirectly due to their death, reported higher levels of DTA than those who were in the control condition. Although gender did not moderate this effect, attachment anxiety did, such that the association was limited to highly anxious individuals. This result is not surprising given that people with an anxious attachment are extremely fearful of abandonment (Mikulincer & Shaver, 2007) and prior research has shown that high levels of attachment anxiety are positively associated with both explicit death anxiety and implicit DTA (Mikulincer & Florian, 2002; Mikulincer, Florian, & Tolmacz, 1990). Study 2 explored, in greater depth, which aspects of separation lead to increased DTA by including a "separation from acquaintance" condition to determine whether DTA rose after separation due to separation per se or the threat that separation posed to close relationships. Participants who had imagined separating from a close partner reported significantly greater DTA than those who had imagined separating from an acquaintance or the control. As in Study 1, this effect was limited to those with high attachment anxiety, regardless of gender. Finally, Study 3 observed that both final and long-term separations had much larger effects on increasing DTA than did a brief separation (or control) and that final separation resulted in greater DTA than long-term separation. Again, these effects were more pronounced among anxiously attached participants. In exploring the association between separation and heightened death awareness, Mikulincer and colleagues (2002) highlighted the importance of close relationships in the context of terror management because the absence of relational sources of security leaves people vulnerable to mortality concerns.

Anxiously attached individuals are particularly susceptible to this vulnerability, as are people who experience more extended or final separations from those closest to them.

Summary. Although some of the reviewed studies indicated that barriers to close relationships such as fear of intimacy and relationship breakup are indeed deleterious given that they increased DTA, the way that MS influenced the uptake of other processes was less straightforward—most likely due to their joint adaptive and maladaptive nature. Rejection sensitivity, desire for multiple sexual partners, intimacy needs, and jealousy were all either activated or inhibited based on a select few examined moderators (primarily gender, attachment, and sex-contingent self-esteem). In brief, it would seem as though the inhibition of potentially deleterious relationship processes after MS is more common among securely attached people, females, and individuals whose self-worth is not contingent on potentially harmful behavioral intentions such as the desire for multiple sexual partners. However, males, those with an anxious-insecure attachment, and individuals who rely on relational self-esteem enhancement as a route to immortality attainment, are more likely to engage in potentially harmful behaviors after MS. Future research could help delineate under what conditions, and for whom, these (and other) potentially deleterious processes are harmful or not.

Discussion

Over two decades of empirical research has investigated the role of close relationships as an alternative anxiety buffer to the defense of cultural worldviews and self-promotion. As it stands, the majority of this work has not yet been synthesized as the final narrative reviews were conducted in the early 2000s (see Mikulincer et al., 2003, 2004). Accordingly, this systematic review provides an updated account of the literature base that should allow for the delineation of when close relationships serve to buffer mortality concerns, under what conditions, and for whom. Furthermore, the review stands to advance our understanding of the mechanisms of effect that explain the buffering role of close relationships. Here, we provide an overview of the aggregate of findings across 73 studies, reveal enduring patterns of moderation, and outline a conceptual process model of terror management. We then highlight some remaining theoretical questions and outline directions for future research.

Overview of Findings

All 73 reviewed studies identified that people respond to MS by increasing efforts to initiate new close relationships and maintain preexisting ones by engaging in beneficial processes that foster intimacy and partner retention (e.g., increased commitment, forgiveness, intimacy striving, attraction, approach motivation, and adaptive jealousy) and

preventing the manifestation of detrimental attitudes and behaviors (e.g., decreased fear of intimacy and rejection sensitivity). However, these “pro-relationship” tendencies were not universally observed. Various dispositional and situational factors inhibit peoples’ intentions to gravitate toward close relationships for anxiety relief. These mixed results are unsurprising given that not everyone possesses the necessary cognitive, affective, and behavioral tools to initiate and sustain healthy intimate relationships (e.g., avoidant-insecure individuals). Accordingly, despite the vast literature supporting the proposition that people engage with loved ones under conditions of existential mortality threat, some people may find nonrelational forms of terror management (i.e., global worldview defense and self-esteem striving) more accessible and psychologically beneficial.

Influential Moderators

As it is important to establish for whom close relationships are a more attainable source of terror management, and for whom they are not, we analyzed the entire aggregate of findings with a keen focus on the levels of moderation (e.g., high vs. low in a personality trait), to identify enduring patterns of moderation across multiple studies, demonstrating either activation or inhibition of relational strivings. Here, we highlight some of the more robust moderators that were identified, including attachment style, gender, and RCSE.

Attachment. Beginning with the attachment security versus insecurity (anxious and avoidant) dichotomy, evidence from multiple studies (Anglin, 2014; Birnbaum et al., 2011; Cox & Arndt, 2012; Cox et al., 2008; Mikulincer & Florian, 2000; Smieja et al., 2006; Taubman-Ben-Ari et al., 2002; Yaakobi et al., 2014) reveals that attachment security is associated with increased relationship initiation and maintenance efforts following MS (e.g., increased romantic attraction, perceptions of social competence, romantic intimacy striving, personal disclosure, and affirmations of worth through romantic relationships, specifically). Moreover, securely attached people tend to downregulate potentially processes such as rejection sensitivity to further develop and maintain felt security (i.e., a perception that the world is generally safe and that attachment figures are supportive and can be called on during times of distress). It should also be noted that anxiously insecure persons often portray similar, yet exaggerated strivings for intimacy due to their intense drive to seek intimacy. However, unlike their secure counterparts, their overwhelming fear of rejection and low self-confidence typically undermines these efforts and leaves them exposed to anxiety (Mikulincer & Shaver, 2007).

It is perhaps unsurprising that secure individuals are more willing and able to foster meaningful close relationships, for they have had a lifetime of positive interpersonal experiences to draw on and, as such, maintain a healthy perspective of how relationships should ideally function (Hazan & Shaver,

1987; Mikulincer & Erev, 1991). However, anxious-insecure individuals strive for intimacy and closeness but often are unsuccessful at attaining attachment/felt security. More so, avoidant-insecure individuals (i.e., emotionally distant, distrusting, and compulsively self-reliant) are almost entirely closed-off to the prospect of relationship-based terror management. In fact, some of the above-cited studies found that avoidance is generally associated with less romantic attraction, reduced interest in social interactions, and lower intimacy striving. In brief, the current findings suggest that attachment security fosters the activation of relational strivings, whereas insecurity (particularly avoidant insecurity) undermines attempts at restoring psychological equilibrium through close relationships. Accordingly, insecure individuals may find nonrelational forms of terror management (i.e., worldview defense and self-esteem striving) to be more effective.

Gender. Gender also played a significant role in explaining the variance in the activation and inhibition of relational striving across multiple studies, as indicated by outcome measures of romantic cognition, physical attraction, and sexual desire (Arndt et al., 2002; Birnbaum et al., 2011; Silveira et al., 2014). In general, it appears as though females tend to respond to MS by allocating cognitive resources to the romantic constructs such as the thought of developing meaningful and intimate relationships. By contrast, males tend to respond to MS by suppressing romantic cognitions and behavioral engagements in favor of more salacious pursuits of the flesh. It is possible that both genders were merely adhering to worldview-driven norms (e.g., a belief that females ought to refrain from casual sexual encounters in favor of something more long term; Cross & Madson, 1997) in an attempt to enhance their self-esteem. However, it is perhaps more compelling to consider the possibility that the observed gender differences are manifestations of evolved processes. Evolutionary psychologists have long considered that males and females have evolved distinct psychological mechanisms in their environment of evolutionary adaptedness that underlie short- and long-term mating strategies. Sexual strategies theory (Buss & Schmidt, 1993) suggests that the fundamental asymmetry between sexes in minimum levels of parental investment (i.e., the provision of sperm among males, relative to ~10 months of pregnancy for females) contributes to males typically devoting a larger proportion of their mating effort toward short-term mating than women, as males' reproductive success increases when they inseminate a larger number of mates. However, females have historically pair-bonded with less mates; have been more selective of who they mate with; and have increased their reproductive success by accruing external resources such as food, shelter, and protection for themselves and their offspring. Ultimately, these gender differences magnify or impede the recruitment of certain relationship processes that, depending on the cir-

cumstance, could either make relational security more-or-less attainable.

RCSE. Although many of the reviewed studies incorporated global measures of self-esteem as covariates (e.g., Rosenberg's self-esteem scale), these general feelings of self-worth are distinctly different from RCSE (e.g., Crocker et al., 2003; Murray et al., 2006; Williams, Schimmel, Hayes, & Martens, 2010). Accordingly, some researchers have specifically targeted the extent to which individuals strive to boost their self-esteem within the context of their relationships and how these strivings moderate relationship maintenance attempts following MS (Bellavia, 2002; Cox & Arndt, 2012). Individuals high on trait RCSE (i.e., those who require partners to reaffirm their value) appear more likely to maintain close relationships and seek approval from loved ones to enhance their self-esteem as a primary motive. By contrast, those with low RCSE do not necessarily avoid close relationships altogether; they merely do not activate pro-relationship processes that are based on self-esteem striving. The literature appears to have benefited from the use of specific relationship-based self-esteem measures that offer a more nuanced understanding of how the self-esteem buffer is implicated within close relationships.

Conceptual Process Model

Recent reviews of TMT promote three "global" anxiety buffers that help people maintain a greater sense of psychological equanimity: (a) cultural worldview defense (i.e., the strengthening of values and customs associated with one's immortality-affording worldview), (b) self-esteem striving (i.e., efforts to meet or exceed standards of conduct associated with a worldview), and (c) close relationships (i.e., drawing on loved ones to foster a greater sense of attachment/felt security; Pyszczynski et al., 2015). However, the current evidence base indicates that these buffers are not necessarily mutually exclusive. For example, close relationships are not only effective because attachment/felt security promotes the reduction of existential anxiety but also because they offer a valuable platform for the consensual validation of worldviews and enhancement of self-esteem. The intuitive notion that close relationships are essentially an amalgam of all three buffering components is nothing new, although it does seem as though current conceptions of TMT shy away from articulating that all three components likely mediate the buffering effect of close relationships. Henceforth, we justify an updated conceptual process model of terror management based on the aggregate findings from the present systematic review (see Figure 3).

To begin, our model reinforces the preestablished tripartite security model's stance that there are three global anxiety buffers (i.e., close relationships, self-esteem striving, and worldview defense) that help reduce mortality concerns (Hart et al., 2005). However, we further propose the existence of a

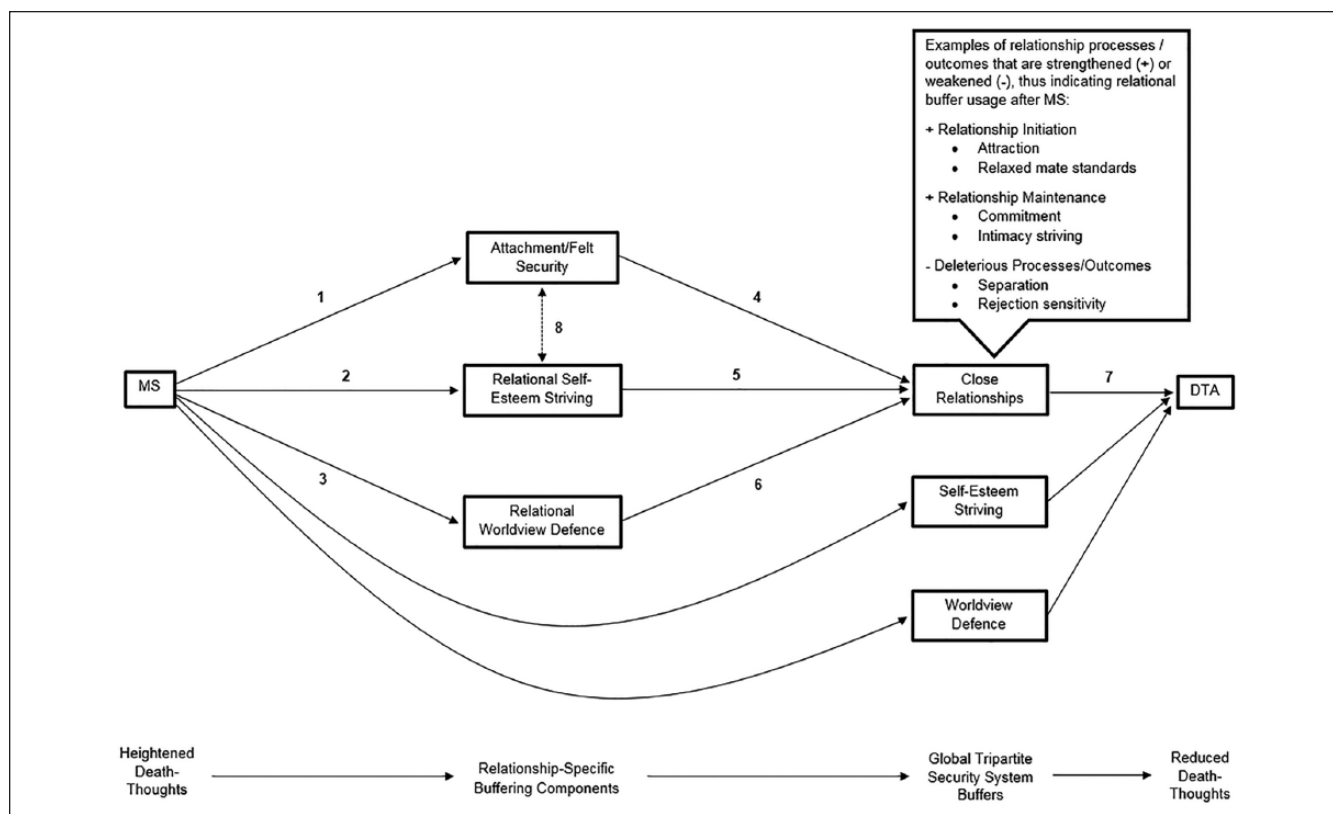


Figure 3. Conceptual process model.

Note. MS = mortality salience; DTA = death-thought accessibility.

subordinate tripartite model embedded within the relational buffer itself. That is, the buffering potency of close relationships can be explained by their association with all three buffering components (i.e., attachment/felt security, relational self-esteem striving, and relational worldview defense). Table 2 provides direct evidence from multiple independent studies validating each of the six mediational effect pathways as seen in Figure 3, through which close relationships operate.

There is no denying that attachment/felt security plays a crucial buffering role (see Pathways 1 and 4 of Figure 3) and has been indirectly shown to do so independently of self-esteem and worldview components (e.g., Hirschberger, Florian, & Mikulincer, 2002, 2003). Indeed, the attachment/felt security pathways are essentially the primary reason why close relationships were initially incorporated into the TMT framework and remains relevant based on the evidence. The second pathway is that of relational self-esteem striving, which involves efforts to enhance one's self-esteem by relying on close others to positively affirm one's self (see Pathways 2 and 5). This pathway has been the most studied as an alternative to attachment/felt security, perhaps, in part, due to the ease of which to employ well-validated measures of RCSE or incorporate experimental paradigms that bolster or threaten relational self-worth. Finally, close relationships have also been shown to exert a buffering effect when they

promote immortality-affording worldviews (see Pathways 3 and 6). That is, when close others are able to strengthen faith in the validity of one's worldview through shared interest and similarity. In turn, these pathways offer close relationships the capacity to effectively reduce death-related thoughts (see Pathway 7).

Although our model proposes three distinct pathways of mediation, we must acknowledge, just as other theorists have (e.g., Hart et al., 2005; Mikulincer et al., 2003), that there is some overlap among the buffers. Indeed, the literature base provides preliminary support for the simultaneous activation of multiple buffers when individuals use close relationships to defend against mortality. For example, securely attached individuals who have a strong predisposition toward the attainment and maintenance of attachment/felt security are also more likely to rely on their romantic partners to enhance their sense of self-worth following MS (see Pathway 8). What that suggests is that there is the potential, at least among securely attached individuals, to activate both components of the relational buffer simultaneously; however, more research is required.

Finally, not everyone is willing or able to rely on loved ones for support during times of distress. If heightened death-thoughts must be dealt with at all costs, as TMT implies, then those who inhibit relational strivings would require some

Table 2. Summary of Key Findings in Support of Each Pathway in the Model, Including Moderators.

Pathways (corresponding to Figure 3)	Example articles and key findings
<i>Pathway 1: MS-AFS</i>	MS is associated with increased attachment/felt security attainment, providing future security-affording partners share similar characteristics to early attachment figures (e.g., parents; Cox et al., 2008).
<i>Pathway 2: MS-RSES</i>	MS is associated with a greater need for self-esteem affirmation within close relationships, as a product of high relationship-contingent self-esteem (Bellavia, 2002; Cox & Arndt, 2012), short-term dating interest (Kosloff, Greenberg, Sullivan, & Weise, 2010), secure attachment (Cox & Arndt, 2012), and avoidant attachment (Birnbau, Hirschberger, & Goldenberg, 2011).
<i>Pathway 3: MS-RWD</i>	MS is associated with greater need for worldview validation from romantic partners when one's focus is on long-term dating (Kosloff et al., 2010).
<i>Pathway 4: AFS-RBA</i>	Secure attachment (i.e., a predictor of felt security striving and attainment) is associated with increased intimacy striving (Mikulincer & Florian, 2000), increased preferences for romantic partners (Cox et al., 2008), heightened perceptions of social competence, more desire to initiate social interactions, and decreased rejection sensitivity (Taubman-Ben-Ari, Findler, & Mikulincer, 2002).
<i>Pathway 5: RSES-RBA</i>	The need for relationship-based self-esteem enhancement is associated with increased attraction to potential short-term mates (Kosloff et al., 2010) and increased negative reactions to a partner's sexual infidelity (indicating the importance of their partner for post-MS anxiety relief; Goldenberg et al., 2003).
<i>Pathway 6: RWD-RBA</i>	The need to have worldviews validated within the context of close relationships is associated with increased attraction to those who share similar worldviews and are in-group members (Frischlich, Rieger, Dratsch, & Bente, 2015; Kosloff et al., 2010), whereas worldview differences decreased relationship commitment (Strachman & Schimel, 2006).
<i>Pathway 7: RBA-DTA</i>	Relationship-maintaining processes and outcomes such as having self-esteem bolstering romantic partners (Cox & Arndt, 2012), positive interactions with parents (Cox et al., 2008), and romantic thoughts (Goldenberg, Pyszczynski, McCoy, Greenberg, & Solomon, 1999) have been found to reduce DTA.
<i>Pathway 8: AFS-RSES</i>	Secure attachment (i.e., a predictor of felt security striving and attainment) is positively associated with increased perceptions of partner positive regard (i.e., relational self-esteem striving; Cox & Arndt, 2012).

Note. MS = mortality salience; AFS = attachment/felt security; RSES = relational self-esteem striving; RWD = relational worldview defense; RBA = relational buffer activation; DTA = death-thought accessibility.

other form of relief such as nonrelational worldview defense and/or self-esteem striving. For example, avoidant-insecure persons who tend to shy away from close relationships following MS (Mikulincer et al., 2002) are also more likely than those with a secure predisposition to then engage in maladaptive forms of global worldview defense and/or self-esteem striving (e.g., Caspi-Berkowitz, 2003; Gillath & Hart, 2010; Mikulincer & Florian, 2000; Weise et al., 2008). This attachment security versus insecurity distinction provides a clear and robust impression that the relational buffer is not always for everyone.

In sum, our conceptual process model provides a more up-to-date account of the anxiety-buffering role of close relationships. Rather than simply viewing close relationships as a product of attachment/felt security, their buffering potential should be explicitly described as an amalgam of all three forms of defense that are accessible to those who are predisposed or situationally primed to initiate and maintain close relationships. For those who are unwilling or unable to seek the comfort of intimacy, the traditional forms of terror management that are not associated with close relationships should be favored.

Theoretical and Conceptual Issues

Despite the substantial body of evidence that suggests that close relationships are a viable form of terror management for individuals with certain characteristic traits, some important theoretical issues warrant consideration. First, there is disagreement among theorists as to the extent to which the relational buffer operates due to attachment/felt security in a manner that is independent of relational self-esteem and worldview motives. Second, it is sometimes difficult to predict when people will respond to MS by seeking loved ones rather than engaging in global forms of worldview defense and self-esteem striving. Third, it is difficult to discern whether or not intuitively deleterious processes such as conflict and jealousy should serve a buffering function and if so, under what conditions. Here, we discuss these three concerns in order.

Functional independence. Much evidence suggests that attachment/felt security afforded within close relationships successfully alleviates mortality concerns (e.g., Mikulincer & Florian, 2000; Weise et al., 2008), yet the independence of the buffering function of close relationships from those of

self-esteem and worldview motives remains unclear. The present review revealed a considerable amount of evidence suggesting that close relationship striving after MS is highly contingent on whether or not self-esteem can be enhanced, and worldviews consensually validated through the process (e.g., Bellavia, 2002; Cox & Arndt, 2012; Kosloff et al., 2010). Nonetheless, several studies have also determined that attachment/felt security can reduce death-related anxiety independently of self-esteem and worldview needs being met (e.g., Hirschberger, Florian, & Mikulincer, 2002, 2003). These divergent findings suggest that more work must be done to understand the conditions under which the relational buffer is effective due to attachment/felt security, alone.

Several influential terror management theorists have, over time, provided their thoughts on what is a significant topic of debate. On one hand, Greenberg (2012) suggests that close relationships do not necessarily deserve a special place within the TMT framework because the attachment/felt security component might not serve any kind of symbolic death-denying function such as worldview defense and self-esteem striving are expected to do. We agree that if Greenberg's argument holds true, then the current tripartite account of terror management would need to be revised; however, the role of close relationships is so influential that one would assume the study of close relationships and attachment processes as they relate to TMT would continue to flourish. On the other hand, proponents of the terror management role of close relationships (e.g., Hart et al., 2005; Mikulincer et al., 2003) suggest that close relationships can independently alleviate mortality concerns because they provide (a) a platform for procreation that facilitates a literal form of immortality by way of propagating one's genetic material (Lifton, 1979), (b) a way to feel part of a larger social entity (e.g., couples, group, and community) that expands one's boundaries and makes one feel more connected to the world, and (c) an opportunity to experience passionate love in the form of intense ecstatic peak experiences associated with the feeling of being fully alive (Maslow, 1968). In our view, the observed empirical contingencies involving the tripartite security model corroborate with the notion that what close relationships can provide to quell existential concerns are inherently cultural and symbolic in nature. For example, love is a culturally defined concept that varies depending on where one was raised (Hiew et al., 2015; Smith & Massey, 2013). Even if the experiential feeling of "being fully alive" when in love is fundamentally universal, worldview is still implicated. Similarly, parenthood can increase one's sense of self-worth and bolster the validity of one's worldviews as a product of passing one's values and ideals on to the next generation (Wisman & Goldenberg, 2005).

Perhaps, our ultimate desire to have our cherished worldviews reinforced and self-esteem enhanced may, in fact, underlie the vast majority of attempts to initiate and maintain close relationships. Future research should endeavor to clarify this enduring debate.

Predicting buffer activation. Results from this review suggest that not everyone is willing or able to rely on the relational buffer for terror management purposes. Rather, some individuals show a preference for worldview defense and self-esteem striving to assuage mortality concerns. The challenge for researchers is to be able to devise accurate a priori predictions of when close relationships will and will not be used. Despite our current understanding of the many moderating variables that influence peoples' defensive strategies (e.g., secure attachment predicting relational security striving and insecurity predicting worldview defense and self-esteem striving—Mikulincer & Florian, 2000), the extent to which we can reliably predict which buffer people will use remains unclear.

Recently, Martin and van den Bos (2014) claimed that one of the biggest issues with TMT is its lack of predictive power and it being a nonfalsifiable theory. They referenced instances that occur where findings run counter to initial hypotheses and that the outcomes—almost any, in fact—can easily be reconciled within the theoretical framework. For example, Miller's (2003) study from the present review discovered that rather than resolving conflict following MS, which would indicate relational buffer activation, participants instead became more hostile at a hypothetical partner's lack of interest in an important hobby of theirs. Although this effect was not expected, it was identified as likely due to worldview defense, as participants may have interpreted the threat to their hobby as a threat to a valuable immortality-affording element of their cultural worldview. Thus, although this and other findings suggest a disinterest in relational forms of security, they, nonetheless, aligned with TMT, more broadly.

In response, Pyszczynski and colleagues (2015) suggested that the lack of predictive power, in particular, should not be perceived as a criticism of TMT per se but rather viewed as a reflection of the complexity of the human animal. More than the obvious differences in peoples' biological temperament, attachment needs, the content of their worldviews, and the particular aspects of worldview that they internalize as their own, people likely hold onto various and sometimes conflicting elements to defend themselves with. Although understanding the moderating effects of various dispositional and situational factors that either activate or inhibit certain indicators of buffer usage allows for better predictions to be made, the truth is that sometimes interesting and genuinely unexpected results will manifest. Rather than that being discouraging to researchers and off-putting to critics, those unexpected findings may precipitate new avenues of research and should be celebrated.

Interpreting questionable outcomes. The present review highlighted a small number of studies that found that reminders of mortality can lead to increased conflict, jealousy, and risky sex. However, there is a case to be made that some of these findings might not always be detrimental, so careful

interpretation of the findings is warranted. Beginning with the results that showed that MS increased jealous reactions, they could be interpreted as paradoxically beneficial for relationships in that jealousy can motivate maintenance efforts to prevent partners from defecting to rivals. Thus, increased jealousy following MS could potentially reflect a heightened desire to hold onto and maintain one's relationship. The contention that jealousy can be potentially beneficial to the preservation of close relationships is corroborated by research into the evolutionary underpinnings of human emotions. This research suggests that jealousy is valuable as it can increase the reproductive success of individuals who successfully fend off rivals and retain the interest of their mate (Buss, 2000; Buss et al., 1999). The notion that jealousy is an evolved universal human emotion is reinforced, no less, by attachment research that indicates that all three major subtypes (i.e., anxious, avoidant, and secure) are capable of responding to cues of partner infidelity with increased jealousy, although the strength, intensity, and secondary emotional responses (e.g., anger vs. fear) differ (Sharpsteen & Kirkpatrick, 1997).

Anger-based conflict is another example of deleterious processes that can potentially be beneficial to close relationships. Although anger is often intuitively seen as a maladaptive emotion, according to Baumeister, Stillwell, and Wotman's (1990) content analysis of victim and perpetrator accounts of interpersonal conflict, the suppression of anger in a relationship is worse. When a victim initially hides their anger and then finally responds to an accumulated series of provocations, not only is this anger response usually more extreme, but the transgressor often perceives the conflict as an unjustified overreaction to a single incident, as opposed to the actual true set of transgressions. When this occurs, both parties genuinely feel like victims, and relationships disillusionment is more likely to follow. Accordingly, as long as anger-based conflict is justifiable and aimed at finding a solution rather than inflicting senseless harm out of spite, an increase in anger following MS could be interpreted as beneficial and in favor of the relational buffer hypothesis.

Similarly, an increased uptake of risky sexual behaviors and intentions following MS might not always be damaging. Although risky sex (conceptualized as a desire for a greater number of sexual partners, for example) is largely maladaptive to long-term commitment because of the risk of infidelity, it can be of benefit in some cases. For instance, an increased desire to have sex with multiple partners for someone who is currently single could be viewed as a potential (albeit risky) strategy to forge intimacy by sifting through the sample pool of mates to find whoever is most suitable. In addition, sex can provide a much-needed source of intimacy (Davis et al., 2004) and is certainly a strategy people with an anxious attachment have been known to engage in following MS (Mikulincer et al., 2002). With all of the above in mind, the deleterious outcomes reported in this review should be carefully interpreted and not immediately taken as direct evidence against the anxiety-buffering

role of close relationships. Future research would benefit from incorporating novel theories that elucidate when potentially deleterious social outcomes such as anger-based conflict are to be classified as either adaptive or maladaptive to close relationships following MS.

Future Research

Our survey of existing research in the area of close relationships and TMT has revealed several theoretical and conceptual issues that future research could benefit from addressing. First, the extent to which close relationships provide anxiety relief due to attachment/felt security independent of worldview and self-esteem influences must be clarified. Second, further research should be conducted to allow for more accurate predictions to be made concerning which of the available buffers people will adopt in any given situation. Third, future research examining potentially deleterious relationship processes should be carefully designed to allow for less ambiguous interpretations of outcomes. Here, we address these three main avenues for future research and stress the importance of examining the potential long-term benefits of close relationships.

It is important to determine whether the attachment/felt security component of close relationships offers a distinct and effective form of terror management, comparable with that of worldview defense and self-esteem striving. One way to achieve that end would be to conduct a comprehensive study incorporating a parallel triple mediation design, inspired by our conceptual process model (see Figure 3), with MS predicting an indicator of relationship initiation or maintenance (e.g., commitment), as mediated by attachment/felt security, relational self-esteem striving, and/or relational worldview defense. This would allow us to test whether attachment/felt security can carry (i.e., mediate and explain) the anxiety-buffering role of close relationships, independent of self-esteem striving and worldview defense. In so doing, this approach should importantly provide more conclusive evidence to either support or reject the claim that the unique buffering effect associated with close relationships (i.e., attachment/felt security) is truly capable of serving a terror management function.

The second avenue for future research is to determine how and why people might decide to turn to one source of protection over the others to detoxify death. One idea would be for future research to quantify the "security value" of buffers so that their buffering potency could be used to determine which would be activated, as Pyszczynski and colleagues (2015) suggested. We agree with their proposal and propose two potential indicators of security value. Namely, the rapidity of relief that the buffers offer and their psychological cost (i.e., how cognitively taxing they are). As an example, suppose someone is predisposed to find more security from romantic intimacy than by global worldview defense (e.g., a securely attached person), but relief from

their partner is more resource demanding and slower to take effect than worldview defense (e.g., where the person has just had a relationship breakup and has not met a new partner). In such cases, we might expect that worldview defense would be adopted rather than relational striving. Under the outlined conditions, worldview defense would be the most parsimonious and potent form of terror management even though it might not be as intrinsically helpful or beneficial in the long term for one's relationship.

This heuristic "least effort principle" approach to relieving mortality concerns is consistent with studies that show that people tend to desire more short-term immediate rewards under conditions of MS (e.g., Griskevicius, Tybur, Delton, & Robertson, 2011) and that DTA increases as cognitive resources become more and more depleted (e.g., Gailliot, Schmeichel, & Baumeister, 2006). In simple terms, people must opt for the least effortful strategy to reduce already present mortality concerns and to prevent an upsurge of additional anxiety. Moreover, because participants in typical MS studies experience one or more cognitive load/distraction tasks before the outcome measure(s), it stands to reason that the least resource demanding approach would be favored because participants are already somewhat depleted in these typical studies. In short, future studies may benefit from measuring or manipulating the cognitive demand and onset of relief of terror management processes. This would allow for more precise predictions to be made concerning which of the available components people will adopt and better our understanding of why people sometimes engage in processes that are potentially harmful to their close relationships. As the unexpected findings from this review attest, even though our likely proclivity to engage in heuristic short-term bases of terror management is adaptive in that death-related anxiety is effectively buffered, our nearsightedness can lead to suboptimal decision making that is not necessarily adaptive for relationship maintenance in the long run.

Our review has also established the need for future studies to be designed in a way that leads to less ambiguity in the interpretation of findings, particularly those concerning potentially deleterious relationship processes. For example, under what conditions and for whom is anger-based conflict engaged in with the aim of improving or harming close relationships? The recalibration theory of human anger (Sell, 2011; Sell, Tooby, & Cosmides, 2009) may offer some novel insight to answering this question. According to the theory, anger was designed by natural selection to nonconsciously orchestrate a set of responses to interpersonal conflicts of interest so that an individual may avoid exploitation and gain their "fair share." When an anger response is consistent with the evolutionary function of anger, this may lead to adaptive outcomes associated with relationship maintenance, whereas anger responses that are at odds with the evolutionary function of the emotion may be seen as less adaptive for relationship maintenance. By taking into account novel perspectives such as the recalibration theory, future research may be able to more definitively

conclude whether or not deleterious relationship processes actually indicate relational buffer neglect.

Finally, the field would likely benefit from future research examining whether the buffering effect of close relationships, as indexed by the many processes reported within this review, generalize over time within long-standing relationships. To date, no studies have longitudinally examined how effectively close relationships buffer death awareness over time, nor have any studies directly compared how people in long-term romantic relationships manage death awareness relative to people who have been single for a comparable period. Based on empirical findings found within this review, commitment generally buffers death-related anxiety and is associated with other positive outcomes such as greater forgiveness (Florian et al., 2002; Van Tongeren et al., 2013; cf. Strachman & Schimel, 2006). Therefore, the longer one is in a satisfying romantic relationship, presumably the more protected they will be from mortality concerns.

Conclusion

This systematic review was the first of its kind to provide a comprehensive and integrative overview of almost two decades of research pertaining to the terror management role of close relationships. Overall findings revealed that close relationships can temporarily reduce death-related anxiety; however, not everyone is predisposed to do so. Various individual difference and situational factors either activate or inhibit this relational form of terror management (e.g., attachment, gender, and RCSE). For those who are willing and able to rely on loved ones for relief, reminders of death increase attempts to initiate new close relationships and maintain pre-existing ones (by increasing pro-relationship outcomes and minimizing harmful outcomes). This review also inspired an updated conceptual process model of terror management, with a special focus on the three main mechanisms of effect underlying the relational buffer (i.e., attachment/felt security striving, relational self-esteem striving, and relational worldview validation). It was also made apparent that several theoretical issues require clarification by future empirical work.

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Note

1. Two dissertations were excluded. One was unrelated to terror management theory (TMT), whereas the other contained studies that were later published in one of the reviewed journal articles.

References

- Adams, J. M., & Jones, W. H. (1997). The conceptualization of marital commitment: An integrative analysis. *Journal of Personality and Social Psychology*, 72, 1177-1196. doi:10.1037/0022-3514.72.5.1177
- Anglin, S. M. (2014). From avoidance to approach: The effects of mortality salience and attachment on the motivation to repair troubled relationships. *Personality and Individual Differences*, 66, 86-91. doi:10.1016/j.paid.2014.03.012
- Arndt, J., Greenberg, J., & Cook, A. (2002). Mortality salience and the spreading activation of worldview-relevant constructs: Exploring the cognitive architecture of terror management. *Journal of Experimental Psychology: General*, 131, 307-324. doi:10.1037/0096-3445.131.3.307
- Arriaga, X. B., & Rusbult, C. E. (1998). Standing in my partner's shoes: Partner perspective-taking and reactions to accommodative dilemmas. *Personality and Social Psychology Bulletin*, 9, 927-948. doi:10.1177/0146167298249002
- Baldwin, M. W., & Holmes, J. G. (1987). Salient private audiences and awareness of the self. *Journal of Personality and Social Psychology*, 52, 1087-1098. doi:10.1037/0022-3514.52.6.1087
- Baumeister, R. F., Stillwell, A., & Wotman, S. R. (1990). Victim and perpetrator accounts of interpersonal conflict: Autobiographical narratives about anger. *Journal of Personality and Social Psychology*, 59(5), 994-1005. doi:10.1037/0022-3514.59.5.994
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, 61, 226-244. doi:10.1037/0022-3514.61.2.226
- Batson, C. D., Batson, J. G., Slingsby, J. K., Harrell, K. L., Peekna, H. M., & Todd, R. M. (1991). Empathic joy and the empathy-altruism hypothesis. *Journal of Personality and Social Psychology*, 61, 413-426. doi:10.1037/0022-3514.61.3.413
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachment as a fundamental human motivation. *Psychological Bulletin*, 117, 497-529. doi:10.1037//0033-2909.117.3.497
- Becker, E. (1962). *The birth and death of meaning: A perspective in psychiatry and anthropology*. New York, NY: Free Press.
- Becker, E. (1971). *The lost science of man*. New York, NY: George Braziller.
- Becker, E. (1973). *The denial of death*. New York, NY: Free Press.
- Becker, E. (1975). *Escape from evil*. New York, NY: Free Press.
- Bellavia, G. M. (2002). *Terror management by proxy: Can romantic partners alleviate anxieties about death?* (Unpublished doctoral dissertation). University at Buffalo—The State University of New York, NY.
- Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology*, 42, 155-162. doi:10.1037/t00748-000
- Berscheid, E., Snyder, M., & Omoto, A. M. (1989). The relationship closeness inventory: Assessing the closeness of interpersonal relationships. *Journal of Personality and Social Psychology*, 57, 792-807. doi:10.1037/0022-3514.57.5.792
- Birnbaum, G., Hirschberger, G., & Goldenberg, J. (2011). Desire in the face of death: Terror management, attachment, and sexual motivation. *Personal Relationships*, 18, 1-19. doi:10.1111/j.1475-6811.2010.01298.x
- Block, J. H. (1973). Conceptions of sex role: Some cross-cultural and longitudinal perspectives. *The American Psychologist*, 28, 512-526. doi:10.1037/h0035094
- Bowlby, J. (1969). *Attachment and loss, Vol. I: Attachment*. London, England: Penguin Books.
- Bowlby, J. (1973). *Attachment and loss, Vol. II: Separation: Anxiety and anger*. London, England: Penguin Books.
- Bowlby, J. (1980). *Attachment and loss, Vol. III: Loss, sadness and depression*. London, England: The Hogarth Press and the Institute of Psycho-Analysis.
- Bowlby, J. (1982). *Attachment and loss, Vol. I: Attachment* (2nd ed.). New York, NY: Basic Books.
- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46-76). New York, NY: Guilford Press.
- Brumbaugh, C. C., & Fraley, R. C. (2006). Transference and attachment: How do attachment patterns get carried forward from one relationship to the next? *Personality and Social Psychology Bulletin*, 32, 552-560. doi:10.1177/0146167205282740
- Buhrmester, D., Furman, W., Wittenberg, M. T., & Reis, H. T. (1988). Five domains of interpersonal competence in peer relationships. *Journal of Personality and Social Psychology*, 55, 991-1008. doi:10.1037/0022-3514.55.6.991
- Burke, B. L., Martens, A., & Faucher, E. H. (2010). Two decades of terror management theory: A meta-analysis of mortality salience research. *Personality and Social Psychology Review*, 14, 155-195. doi:10.1177/1088868309352321
- Buss, D. M. (2000). *The dangerous passion: Why jealousy is as necessary as love and sex*. New York, NY: Free Press.
- Buss, D. M., Larsen, R. J., Westen, D., & Semmelroth, J. (1992). Sex differences in jealousy: Evolution, physiology, and psychology. *Psychological Science*, 3, 251-256. doi:10.1111/j.1467-9280.1992.tb00038.x
- Buss, D. M., & Schmitt, D. P. (1993). Sexual strategies theory: An evolutionary perspective on human mating. *Psychological Review*, 100, 204-232. doi:10.1037/0033-295x.100.2.204
- Buss, D. M., Shackelford, T. K., Kirkpatrick, L. A., Choe, J. C., Lim, H. K., Hasegawa, M., . . . Bennett, K. (1999). Jealousy and the nature of beliefs about infidelity: Tests of competing hypotheses about sex differences in the United States, Korea, and Japan. *Personal Relationships*, 6, 125-150. doi:10.1111/j.1475-6811.1999.tb00215.x
- Caspi-Berkowitz, N. (2003). *Mortality salience effects on the willingness to sacrifice one's life: The moderating role of attachment orientations* (Unpublished doctoral dissertation). Bar-Ilan University, Ramat Gan, Israel.
- Cassidy, J., & Shaver, P. R. (1999). *Handbook of attachment: Theory, research, and clinical applications*. New York, NY: Guilford Press.
- Coolsen, M. K., & Nelson, L. J. (2002). Desiring and avoiding close romantic attachment in response to mortality salience. *OMEGA: Journal of Death and Dying*, 44, 257-276. doi:10.2190/2x6q-jrdw-2j7b-5j8k
- Cox, C. R., & Arndt, J. (2012). How sweet it is to be loved by you: The role of perceived regard in the terror management of close relationships. *Journal of Personality and Social Psychology*, 102, 616-632. doi:10.1037/a0025947
- Cox, C. R., Arndt, J., Pyszczynski, T., Greenberg, J., Abdollahi, A., & Solomon, S. (2008). Terror management and adults' attachment to their parents: The safe haven remains. *Journal of Personality & Social Psychology*, 94, 696-717. doi:10.1037/0022-3514.94.4.696

- Crocker, J., & Wolfe, C. (2001). Contingencies of worth. *Psychological Review*, 108, 593-623. doi:10.1037/0033-295X.108.3.593
- Crocker, J., Luhtanen, R. K., Cooper, M. L., & Bouvrette, S. (2003). Contingencies of self-worth in college students: Theory and measurement. *Journal of Personality and Social Psychology*, 85, 894-908. doi:10.1037/0022-3514.85.5.894
- Cross, S. E., & Madson, L. (1997). Models of the self: Self-construals and gender. *Psychological Bulletin*, 122, 5-37. doi:10.1037/0033-2909.122.1.5
- Davis, D., Shaver, P. R., & Vernon, M. L. (2004). Attachment style and subjective motivations for sex. *Personality and Social Psychology Bulletin*, 30, 1076-1090. doi:10.1177/0146167204264794
- Descutner, C. J., & Thelen, M. H. (1991). Development and validation of a fear-of-intimacy scale. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 3, 218-225. doi:10.1037/1040-3590.3.2.218
- Doherty, N. A., & Feeney, J. A. (2004). The composition of attachment networks throughout the adult years. *Personal Relationships*, 11, 469-488. doi:10.1111/j.1475-6811.2004.00093.x
- Doherty, R. W., Hatfield, E., Thompson, K., & Choo, P. (1994). Cultural and ethnic influences on love and attachment. *Personal Relationships*, 1, 391-398. doi:10.1111/j.1475-6811.1994.tb00072.x
- Downey, G., & Feldman, S. I. (1996). Implications of rejection sensitivity for intimate relationships. *Journal of Personality and Social Psychology*, 70, 1327-1343. doi:10.1037//0022-3514.70.6.1327
- Downey, G., Lebolt, A., Rincon, C., & Freitas, A. L. (1998). Rejection sensitivity and children's interpersonal difficulties. *Child Development*, 69, 1074-1091. doi:10.2307/1132363
- Eagly, A. H., & Wood, W. (1999). The origins of sex differences in human behavior: Evolved dispositions versus social roles. *American Psychologist*, 54, 408-423. doi:10.1037/0003-066X.54.6.408
- Eysenck, H. J., & Eysenck, S. B. G. (1967). On the unitary nature of extraversion. *Acta Psychologica*, 26, 383-390. doi:10.1016/0001-6918(67)90034-0
- Feeney, J. A., & Noller, P. (1990). Attachment style as a predictor of adult romantic relationships. *Journal of Personality and Social Psychology*, 58, 281-291. doi:10.1037/0022-3514.58.2.281
- Florian, V., & Mikulincer, M. (1997). Fear of death and the judgment of social transgressions: A multidimensional test of terror management theory. *Journal of Personality and Social Psychology*, 73, 369-380. doi:10.1037/0022-3514.73.2.369
- Florian, V., Mikulincer, M., & Hirschberger, G. (2002). The anxiety-buffering function of close relationships: Evidence that relationship commitment acts as a terror management mechanism. *Journal of Personality and Social Psychology*, 82, 527-542. doi:10.1037/0022-3514.82.4.527
- Fraley, R. C., & Waller, N. G. (1998). Adult attachment patterns: A test of the typological model. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 77-114). New York, NY: Guilford Press.
- Fraley, R. C., Heffernan, M. E., Vicary, A. M., & Brumbaugh, C. C. (2011). The experiences in close relationships-relationship structures questionnaire: A method for assessing attachment orientations across relationships. *Psychological Assessment*, 23, 615-625. doi:10.1037/a0022898
- Franzoi, S. L., & Shields, S. A. (1984). Body esteem scale. *Journal of Personality Assessment*, 48, 173-178. doi:10.1037/t58570-000
- Frischlich, L., Rieger, D., Dratsch, T., & Bente, G. (2015). Meet Joe Black? The effects of mortality salience and similarity on the desire to date in-group versus out-group members online. *Journal of Social and Personal Relationships*, 32, 509-528. doi:10.1177/0265407514536305
- Gailliot, M. T., Schmeichel, B. J., & Baumeister, R. F. (2006). Self-regulatory processes defend against the threat of death: Effects of self-control depletion and trait self-control on thoughts and fears of dying. *Journal of Personality and Social Psychology*, 91, 49-62. doi:10.1037/0022-3514.91.1.49
- Gillath, O., & Hart, J. (2010). The effects of psychological security and insecurity on political attitudes and leadership preferences. *European Journal of Social Psychology*, 40, 122-134. doi:10.1002/ejsp.614
- Goffman, E. (1972). *Interaction ritual: Essays on face-to-face behaviour*. Middlesex, UK: Allen Lane.
- Goldenberg, J. L., Cox, C. R., Pyszczynski, T., Greenberg, J., & Solomon, S. (2002). Understanding human ambivalence about sex: The effects of stripping sex of meaning. *Journal of Sex Research*, 39, 310-320. doi:10.1080/00224490209552155
- Goldenberg, J. L., Landau, M. J., Pyszczynski, T., Cox, C. R., Greenberg, J., Solomon, S., & Dunnam, H. (2003). Gender-typical responses to sexual and emotional infidelity as a function of mortality salience induced self-esteem striving. *Personality and Social Psychology Bulletin*, 29, 1585-1595. doi:10.1177/0146167203256880
- Goldenberg, J. L., McCoy, S. K., Pyszczynski, T., Greenberg, J., & Solomon, S. (2000). The body as a source of self-esteem: The effect of mortality salience on identification with one's body, interest in sex, and appearance monitoring. *Journal of Personality and Social Psychology*, 79, 118-130. doi:10.1037/0022-3514.79.1.118
- Goldenberg, J. L., Pyszczynski, T., McCoy, S. K., Greenberg, J., & Solomon, S. (1999). Death, sex, love, and neuroticism: Why is sex such a problem? *Journal of Personality and Social Psychology*, 77, 1173-1187. doi:10.1037/0022-3514.77.6.1173
- Goldenberg, J. L., & Roberts, T. A. (2004). The beast within the beauty: An existential perspective on the objectification and condemnation of women. In J. Greenberg, S. L. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 71-85). New York, NY: Guilford Press.
- Goldenberg, J. L., & Roberts, T. A. (2010). The birthmark: An existential account of why women are objectified. In R. Calogero, S. Tantleff-Dunn, & J. K. Thompson (Eds.), *The objectification of women: Innovative directions in research and practice* (pp. 77-100). Washington, DC: American Psychological Association.
- Greenberg, J. (2012). Terror management theory: From genesis to revelations. In P. R. Shaver & M. Mikulincer (Eds.), *Meaning, mortality, and choice: The social psychology of existential concerns* (pp. 17-35). Washington, DC: American Psychological Association.
- Greenberg, J., Kosloff, S., Solomon, S., Cohen, F., & Landau, M. (2010). Towards understanding the fame game: The effect of mortality salience on appeal of fame. *Self and Identity*, 9, 1-18. doi:10.1080/15298860802391546

- Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The causes and consequences of a need for self-esteem: A terror management theory. In R. F. Baumeister (Ed.), *Public self and private self* (pp. 189-206). New York, NY: Springer-Verlag.
- Greenberg, J., Simon, L., Pyszczynski, T., Solomon, S., & Chatel, D. (1992). Terror management and tolerance: Does mortality salience always intensify negative reactions to others who threaten one's worldview? *Journal of Personality and Social Psychology*, 63, 212-220. doi:10.1037//0022-3514.63.2.212
- Griffin, D. W., & Bartholomew, K. (1994). Models of the self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology*, 67, 430-445. doi:10.1037/0022-3514.67.3.430
- Griskevicius, V., Tybur, J. M., Delton, A. W., & Robertson, T. E. (2011). The influence of mortality and socioeconomic status on risk and delayed rewards: A life history theory approach. *Journal of Personality and Social Psychology*, 100, 1015-1026. doi:10.1037/a0022403
- Hansen, J., Winzler, S., & Topolinski, S. (2010). When the death makes you smoke: A terror management perspective on the effectiveness of cigarette on-pack warnings. *Journal of Experimental Social Psychology*, 46, 226-228. doi:10.1016/j.jesp.2009.09.007
- Harmon-Jones, E., Harmon-Jones, C., & Price, T. F. (2013). What is approach motivation? *Emotion Review*, 5, 291-295. doi:10.1177/1754073913477509
- Hart, J., Shaver, P. R., & Goldenberg, J. L. (2005). Attachment, self-esteem, worldviews, and terror management: Evidence for a tripartite security system. *Journal of Personality and Social Psychology*, 88, 999-1013. doi:10.1037/0022-3514.88.6.999
- Hayes, J., Schimel, J., Arndt, J., & Faucher, E. H. (2010). A theoretical and empirical review of the death-thought accessibility concept in terror management research. *Psychological Bulletin*, 136, 699-739. doi:10.1037/a0020524
- Hayes, J., Schimel, J., Faucher, E. H., & Williams, T. J. (2008). Evidence for the DTA hypothesis II: Threatening self-esteem increases death-thought accessibility. *Journal of Experimental Social Psychology*, 44, 600-613. doi:10.1016/j.jesp.2008.01.004
- Hayes, J., Schimel, J., Williams, T. J., Howard, A. L., Webber, D., & Faucher, E. H. (2015). Worldview accommodation: Selectively modifying committed beliefs provides defense against worldview threat. *Self and Identity*, 14, 521-548. doi:10.1080/15298868.2015.1036919
- Hazan, C., & Shaver, P. (1987). Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*, 52, 511-524. doi:10.1037/0022-3514.52.3.511
- Helmreich, R., & Stapp, J. (1974). Short forms of the Texas social behavior inventory (TSBI), an objective measure of self-esteem. *Bulletin of the Psychonomic Society*, 4, 473-475. doi:10.1037/t01280-000
- Hendrick, S. S. (1988). A generic measure of relationship satisfaction. *Journal of Marriage and the Family*, 50, 93-98. doi:10.2307/352430
- Hiew, D. N., Halford, W. K., van de Vijver, F. J. R., & Liu, S. (2015). Relationship standards and satisfaction in Chinese, western, and intercultural Chinese-Western couples in Australia. *Journal of Cross-Cultural Psychology*, 46, 684-701. doi:10.1177/0022022115579936
- Hirschberger, G., Florian, V., & Mikulincer, M. (2002). The anxiety buffering function of close relationships: Mortality salience effects on the readiness to compromise mate selection standards. *European Journal of Social Psychology*, 32, 609-625. doi:10.1002/ejsp.110
- Hirschberger, G., Florian, V., & Mikulincer, M. (2003). Strivings for romantic intimacy following partner complaint or partner criticism: A terror management perspective. *Journal of Social and Personal Relationships*, 20, 675-687. doi:10.1177/02654075030205006
- Hirschberger, G., Florian, V., Mikulincer, M., Goldenberg, J. L., & Pyszczynski, T. (2002). Gender differences in the willingness to engage in risky behavior: A terror management perspective. *Death Studies*, 26, 117-141. doi:10.1080/074811802753455244
- Hoppe, A., Fritsche, I., & Koranyi, N. (in press). Romantic love vs. reproduction opportunities: Disentangling the contributions of different anxiety buffers under conditions of existential threat. *European Journal of Social Psychology*. doi:10.1002/ejsp.2322
- Horney, K. (1945). *Our inner conflicts: A constructive theory of neurosis*. New York, NY: W.W. Norton.
- Johnson, M. P., Caughlin, J. P., & Huston, T. L. (1999). The tripartite nature of marital commitment: Personal, moral, and structural reasons to stay married. *Journal of Marriage and Family*, 61, 160-177. doi:10.2307/353891
- Kirsner, B. R., Figueredo, A. J., & Jacobs, W. J. (2003). Self, friends, and lovers: Structural relations among beck depression inventory scores and perceived mate values. *Journal of Affective Disorders*, 75, 131-148. doi:10.1037/t10286-000
- Knee, C. R., Canevello, A., Bush, A. L., & Cook, A. (2008). Relationship-contingent self-esteem and the ups and downs of romantic relationships. *Journal of Personality and Social Psychology*, 95, 608-627. doi:10.1037/0022-3514.95.3.608
- Kosloff, S., Greenberg, J., Sullivan, D., & Weise, D. (2010). Of trophies and pillars: Exploring the terror management functions of short-term and long-term relationship partners. *Personality and Social Psychology Bulletin*, 36, 1037-1051. doi:10.1177/0146167210374602
- Lam, S. R., Morrison, K. R., & Smeesters, D. (2009). Gender, intimacy, and risky sex: A terror management account. *Personality and Social Psychology Bulletin*, 35, 1046-1056. doi:10.1177/0146167209336607
- Landau, M. J., Goldenberg, J. L., Greenberg, J., Gillath, O., Solomon, S., Cox, C., . . . Pyszczynski, T. (2006). The siren's call: Terror management and the threat of men's sexual attraction to women. *Journal of Personality and Social Psychology*, 90, 129-146. doi:10.1037/0022-3514.90.1.129
- Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 32, pp. 1-62). San Diego, CA: Academic Press.
- Lifton, R. J. (1979). *The broken connection: On death and the continuity of life*. New York, NY: Simon & Schuster.
- Marques, J. M., & Yzerbyt, V. Y. (1988). The black sheep effect: Judgmental extremity towards ingroup members in inter- and intra-group situations. *European Journal of Social Psychology*, 18, 287-292. doi:10.1002/ejsp.2420180308
- Marschall, D. E., Sanftner, J., & Tangney, J. P. (1994). The state shame and guilt scale. In J. P. Tangney, & R. L. Dearing (Eds.), *Shame and guilt* (pp. 239-259). New York, US: Guilford.
- Martin, L. L., & van den Bos, K. (2014). Beyond terror: Towards a paradigm shift in the study of threat and culture. *European Review of Social Psychology*, 25, 32-70. doi:10.1080/10463283.2014.923144

- Maslow, A. H. (1968). *Toward a psychology of being*. New York, NY: Van Nostrand.
- McGregor, H. A., Lieberman, J. D., Greenberg, J., Solomon, S., Arndt, J., Simon, L., & Pyszczynski, T. (1998). Terror management and aggression: Evidence that mortality salience motivates aggression against worldview-threatening others. *Journal of Personality and Social Psychology*, 74, 590-605. doi:10.1037//0022-3514.74.3.590
- Mikulincer, M., & Erev, I. (1991). Attachment styles and the structure of romantic love. *British Journal of Social Psychology*, 30, 273-291. doi:10.1111/j.2044-8309.1991.tb00946.x
- Mikulincer, M., & Florian, V. (2000). Exploring individual differences in reactions to mortality salience: Does attachment style regulate terror management mechanisms? *Journal of Personality and Social Psychology*, 79, 260-273. doi:10.1037//0022-3514.79.2.260
- Mikulincer, M., & Florian, V. (2002). The effects of mortality salience on self-serving attributions-evidence for the function of self-esteem as a terror management mechanism. *Basic and Applied Social Psychology*, 24, 261-271. doi:10.1207/s15324834baspp2404_2
- Mikulincer, M., Florian, V., Birnbaum, G., & Malishkevich, S. (2002). The death-anxiety buffering function of close relationships: Exploring the effects of separation reminders on death-thought accessibility. *Personality and Social Psychology Bulletin*, 28, 287-299. doi:10.1177/0146167202286001
- Mikulincer, M., Florian, V., & Hirschberger, G. (2003). The existential function of close relationships: Introducing death into the science of love. *Personality and Social Psychology Review*, 7, 20-40. doi:10.1207/s15327957pspr0701_2
- Mikulincer, M., Florian, V., & Hirschberger, G. (2004). The Terror of Death and the Quest for Love: An Existential Perspective on Close Relationships. In J. Greenberg, S. L. Koole, & T. Pyszczynski (Eds.), *Handbook of Experimental Existential Psychology* (pp. 287-304). New York, US: Guilford Press.
- Mikulincer, M., Florian, V., & Tolmacz, R. (1990). Attachment styles and fear of personal death: A case study of affect regulation. *Journal of Personality and Social Psychology*, 58, 273-280. doi:10.1037//0022-3514.58.2.273
- Mikulincer, M., & Goodman, G. S. (2006). *Dynamics of romantic love: Attachment, caregiving, and sex*. New York, NY: Guilford Press.
- Mikulincer, M., Hirschberger, G., Nachmias, O., & Gillath, O. (2001). The affective component of the secure base schema: Affective priming with representations of attachment security. *Journal of Personality and Social Psychology*, 81, 305-321. doi:10.1037//0022-3514.81.2.305
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York, NY: Guilford Press.
- Miller, E. D. (2003). Imagining partner loss and mortality salience: Consequences for romantic-relationship satisfaction. *Social Behavior and Personality*, 31, 167-180. doi:10.2224/sbp.2003.31.2.167
- Morris, K. L., & Goldenberg, J. (2015). Objects become her: The role of mortality salience on men's attraction to literally objectified women. *Journal of Experimental Social Psychology*, 56, 69-72. doi:10.1016/j.jesp.2014.09.005
- Murray, S. L., Holmes, J. G., & Collins, N. L. (2006). Optimizing assurance: The risk regulation system in relationships. *Psychological Bulletin*, 132, 641-666. doi:10.1037/0033-2909.132.5.641
- Ogilvie, D. M., Cohen, F., & Solomon, S. (2008). The undesired self: Deadly connotations. *Journal of Research in Personality*, 42, 564-576. doi:10.1016/j.jrp.2007.07.012
- Peplau, L. A., & Perlman, D. (Eds.). (1982). *Loneliness: A sourcebook of current theory, research, and therapy*. New York, NY: John Wiley.
- Pyszczynski, T., Abdollahi, A., Solomon, S., Greenberg, J., Cohen, F., & Weise, D. (2006). Mortality salience, martyrdom, and military might: The great satan versus the axis of evil. *Personality and Social Psychology Bulletin*, 32, 525-537. doi:10.1177/0146167205282157
- Pyszczynski, T., Greenberg, J., & Solomon, S. (1997). Why do we need what we need? A terror management perspective on the roots of human social motivation. *Psychological Inquiry: An International Journal for the Advancement of Psychological Theory*, 8, 1-20. doi:10.1207/s15327965pli0801_1
- Pyszczynski, T., Greenberg, J., & Solomon, S. (1999). A dual-process model of defense against conscious and unconscious death-related thoughts: An extension of terror management theory. *Psychological Review*, 106, 835-845. doi:10.1037/0033-295X.106.4.835
- Pyszczynski, T., Solomon, S., & Greenberg, J. (2015). Thirty years of terror management theory: From genesis to revelation. *Advances in Experimental Social Psychology*, 52, 1-70. doi:10.1016/b.s.aesp.2015.03.001
- Rank, O. (1998). *Psychology and the soul* (G. C. Richter & E. J. Lieberman, Trans.). Baltimore: Johns Hopkins University Press. (Original work published 1930)
- Regan, P. C. (1998). Minimum mate selection standards as a function of perceived mate value, relationship context, and gender. *Journal of Psychology & Human Sexuality*, 10, 53-73. doi:10.1300/j056v10n01_04
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, USA: Princeton University Press.
- Rosenberg, M. (1981). The self-concept: Social product and social force. In M. Rosenberg & R. H. Turner (Eds.), *Social psychology: Sociological perspectives* (pp. 591-624). New York, NY: Basic Books.
- Routledge, C., Arndt, J., & Goldenberg, J. L. (2004). A time to tan: Proximal and distal effects of mortality salience on sun exposure intentions. *Personality and Social Psychology Bulletin*, 30, 1347-1358. doi:10.1177/0146167204264056
- Rusbult, C. E., & Buunk, B. P. (1993). Commitment processes in close relationships: An interdependence analysis. *Journal of Social and Personal Relationships*, 10, 175-204. doi:10.1177/026540759301000202
- Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The investment model scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, 5, 357-391. doi:10.1111/j.1475-6811.1998.tb00177.x
- Sanderson, C. A., & Cantor, N. (1995). Social dating goals in late adolescence: Implications for safe sexual activity. *Journal of Personality and Social Psychology*, 68, 1121-1134. doi:10.1037//0022-3514.68.6.1121
- Sato, A., & Yasuda, A. (2001). Development of the Japanese version of positive and negative affect schedule (PANAS) scales. *Japanese Journal of Personality*, 19, 138-139. doi:10.2132/jjpspp.9.2_138
- Schimmel, J., Hayes, J., Williams, T., & Jahrig, J. (2007). Is death really the worm at the core? Converging evidence that worldview threat increased death-thought accessibility. *Journal of*

- Personality and Social Psychology*, 92, 789-803. doi:10.1037/0022-3514.92.5.789
- Sell, A. (2011). The recalibration theory and violent anger. *Aggression and Violent Behavior*, 16, 381-389. doi:10.1016/j.avb.2011.04.013
- Sell, A., Tooby, J., & Cosmides, L. (2009). Formidability and the logic of human anger. *Proceedings of the National Academy of Sciences of the United States of America*, 106, 15073-15078. doi:10.1073/pnas.0904312106
- Sharabany, R. (1994). Intimate friendship scale: Conceptual underpinnings, psychometric properties and construct validity. *Journal of Social and Personal Relationships*, 11, 449-469. doi:10.1177/0265407594113010
- Sharpsteen, D. J., & Kirkpatrick, L. A. (1997). Romantic jealousy and adult romantic attachment. *Journal of Personality and Social Psychology*, 72, 627-640. doi:10.1037/0022-3514.72.3.627
- Silveira, S., Graupmann, V., Agthe, M., Gutyrchik, E., Blautzik, J., Demircapa, I., . . . Hennig-Fast, K. (2014). Existential neuroscience: Effects of mortality salience on the neurocognitive processing of attractive opposite-sex faces. *Social Cognitive and Affective Neuroscience*, 9, 1601-1607. doi:10.1093/scan/nst157
- Smieja, M., Kalaska, M., & Adamczyk, M. (2006). Scared to death or scared to love? Terror management theory and close relationships seeking. *European Journal of Social Psychology*, 36, 279-296. doi:10.1002/ejsp.301
- Smith, R., & Massey, E. (2013). Aspects of love: The effect of mortality salience and attachment style on romantic beliefs. *OMEGA: Journal of Death and Dying*, 66, 135-151. doi:10.2190/om.66.2.c
- Snell, W. E., Jr., & Finney, P. D. (1993). Measuring relational aspects of the self: Relational-esteem, relational-depression, and relational-preoccupation. *Contemporary Social Psychology*, 17, 44-55.
- Solomon, S., Greenberg, J., & Pyszczynski, T. (1991). Terror management theory of self-esteem. In C. R. Snyder & D. Forsyth (Eds.), *Handbook of social and clinical psychology: The health perspective* (pp. 21-40). New York, NY: Pergamon Press.
- Sprecher, S., & Metts, S. (1989). Development of the 'romantic beliefs scale' and examination of the effects of gender and gender-role orientation. *Journal of Social and Personal Relationships*, 6, 387-411. doi:10.1177/0265407589064001
- Steinman, C. T., & Updegraff, J. A. (2015). Delay and death-thought accessibility: A meta-analysis. *Personality and Social Psychology Bulletin*, 41, 1682-1696. doi:10.1177/0146167215607843
- Strachman, A., & Schimel, J. (2006). Terror management and close relationships: Evidence that mortality salience reduces commitment among partners with different worldviews. *Journal of Social and Personal Relationships*, 23, 965-978. doi:10.1177/0265407506070477
- Sullivan, H. S. (1953). *The interpersonal therapy of psychiatry*. New York, NY: W.W. Norton.
- Takuma, T., & Toda, K. (1988). Interpersonal attitude in adolescence from the viewpoint of attachment theory: An attempt to construct the adult attachment style scale. *Journal of Social Sciences and Humanities*, 196, 1-16.
- Tangney, J. P. (1995). Recent advances in the empirical study of shame and guilt. *American Behavioral Scientist*, 38, 1132-1145. doi:10.1177/0002764295038008008
- Tancredy, C. M., & Fraley, R. C. (2006). The nature of adult twin relationships: An attachment-theoretical perspective. *Journal of Personality and Social Psychology*, 90, 78-93. doi:10.1037/0022-3514.90.1.78
- Taubman-Ben-Ari, O. T. (2004). Intimacy and risky sexual behavior—What does it have to do with death? *Death Studies*, 28, 865-887. doi:10.1080/07481180490490988
- Taubman-Ben-Ari, O. T., Findler, L., & Mikulincer, M. (2002). The effects of mortality salience on relationship strivings and beliefs: The moderating role of attachment style. *The British Journal of Social Psychology*, 41, 419-441. doi:10.1348/014466602760344296
- Taubman-Ben-Ari, O. T., Florian, V., & Mikulincer, M. (1999). The impact of mortality salience on reckless driving: A test of terror management mechanisms. *Journal of Personality and Social Psychology*, 76, 35-45. doi:10.1037/0022-3514.76.1.35
- Trinke, S. J., & Bartholomew, K. (1997). Hierarchies of attachment relationships in young adulthood. *Journal of Social and Personal Relationships*, 14, 603-625. doi:10.1177/0265407597145002
- Trivers, R. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual selection and the descent of man: 1871-1971* (pp. 136-179). Chicago, IL: Aldine.
- Van Tongeren, D. R., Green, J. D., Davis, D. E., Worthington, E. L., & Reid, C. A. (2013). Till death do us part: Terror management and forgiveness in close relationships. *Personal Relationships*, 20, 755-768. doi:10.1111/pere.12013
- Wakimoto, R. (2011). Reconstruction of the subjective temporal distance of past interpersonal experiences after mortality salience. *Personality and Social Psychology Bulletin*, 37, 687-700. doi:10.1177/0146167211400422
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Positive and negative affect schedule. *Journal of Personality and Social Psychology*, 54, 1063-1070. doi:10.1037/t03592-000
- Watson, D., & Clark, L. A. (1992). Affects separable and inseparable: On the hierarchical arrangement of the negative affects. *Journal of Personality and Social Psychology*, 62, 489-505. doi:10.1037/0022-3514.62.3.489
- Walster, E. (1965). The effect of self-esteem on romantic liking. *Journal of Experimental Social Psychology*, 1, 184-197. doi:10.1016/0022-1031(65)90045-4
- Weise, D. R., Pyszczynski, T., Cox, C. R., Arndt, J., Greenberg, J., Solomon, S., & Kosloff, S. (2008). Interpersonal politics: The role of terror management and attachment processes in shaping political preferences. *Psychological Science*, 19, 448-455. doi:10.1111/j.1467-9280.2008
- Williams, T. J., Schimel, J., Hayes, J., & Martens, A. (2010). The moderating role of extrinsic contingency focus on reactions to threat. *European Journal of Social Psychology*, 40, 300-320. doi:10.1002/ejsp.624
- Wisman, A., & Goldenberg, J. L. (2005). From the grave to the cradle: That mortality salience engenders a desire for offspring. *Journal of Personality and Social Psychology*, 89, 46-61. doi:10.1037/0022-3514.89.1.46
- Worthington, E. L., Jr., Hook, J. N., Utsey, S. O., Williams, J. K., & Neil, R. L. (2007). Decisional and emotional forgiveness. Paper presented at the International Positive Psychology Summit. Washington, USA.
- Yaakobi, E., Mikulincer, M., & Shaver, P. R. (2014). Parenthood as a terror management mechanism: The moderating role of attachment orientations. *Personality and Social Psychology Bulletin*, 40, 762-774. doi:10.1177/0146167214525473
- Yamamoto, M., Matsui, Y., & Yamanari, Y. (1982). The structure of perceived aspects of self. *Japanese Journal of Educational Psychology*, 30, 64-68. doi:10.5926/jjep1953.30.1_64